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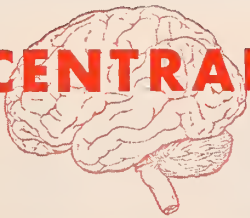
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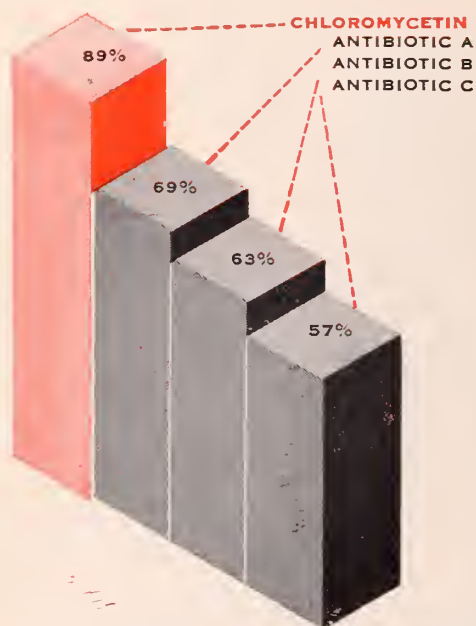
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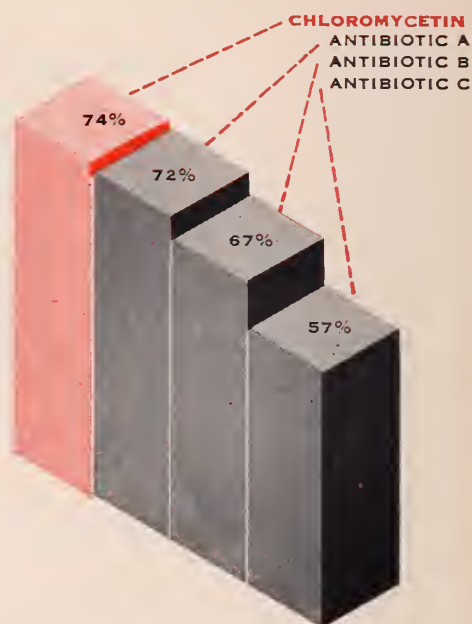
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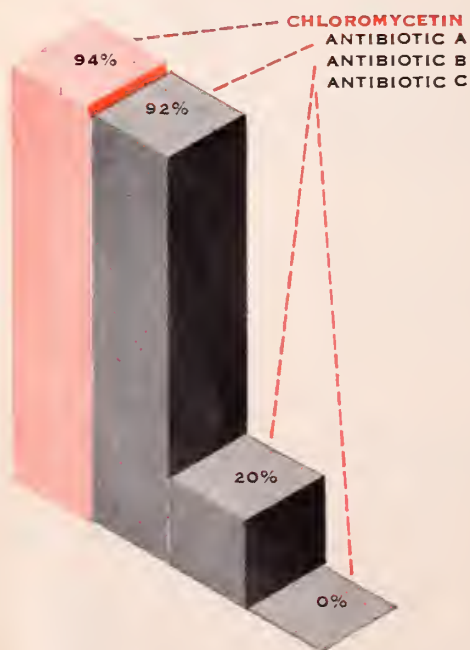
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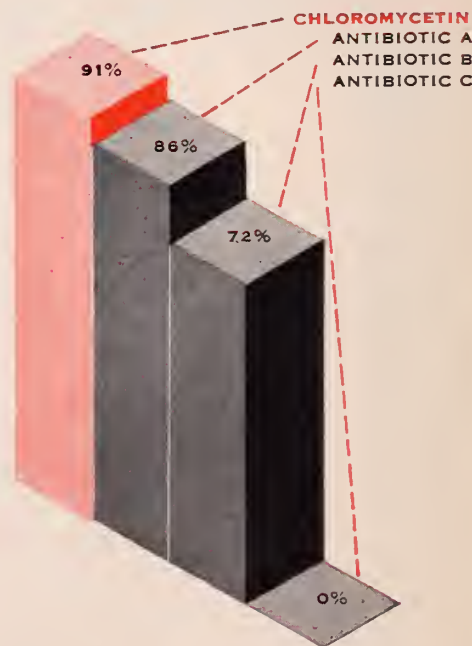
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References (1) Altemeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* 157:305 (Jan. 22) 1955. (2) Austrian, R.: *New York J. Med.* 55:2475 (Sept. 1) 1955. (3) Murphy, F. D., & Waisbren, B. A., in Murphy, F. D.: *Medical Emergencies: Diagnosis and Treatment*, ed. 5, Philadelphia, F. A. Davis Company, 1955, p. 557. (4) Weil, A. J., & Stempel, B.: *Antibiotic Med.* 1:319, 1955. (5) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* 5:365, 1955. (6) Kass, E. H.: *Am. J. Med.* 18:764, 1955. (7) Tebrock, H. E., & Young, W. N.: *New York J. Med.* 55:1159 (Apr. 15) 1955.

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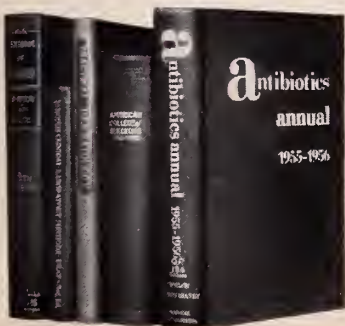
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1. Romansky, M.J., et al., *Antibiotics Annual 1955-1956*, p. 48.
2. Waddington, W. S., Maple, F. C., and Kirby, W. M. M., *A.M.A. Archives of Internal Medicine*, 1954, p. 556.

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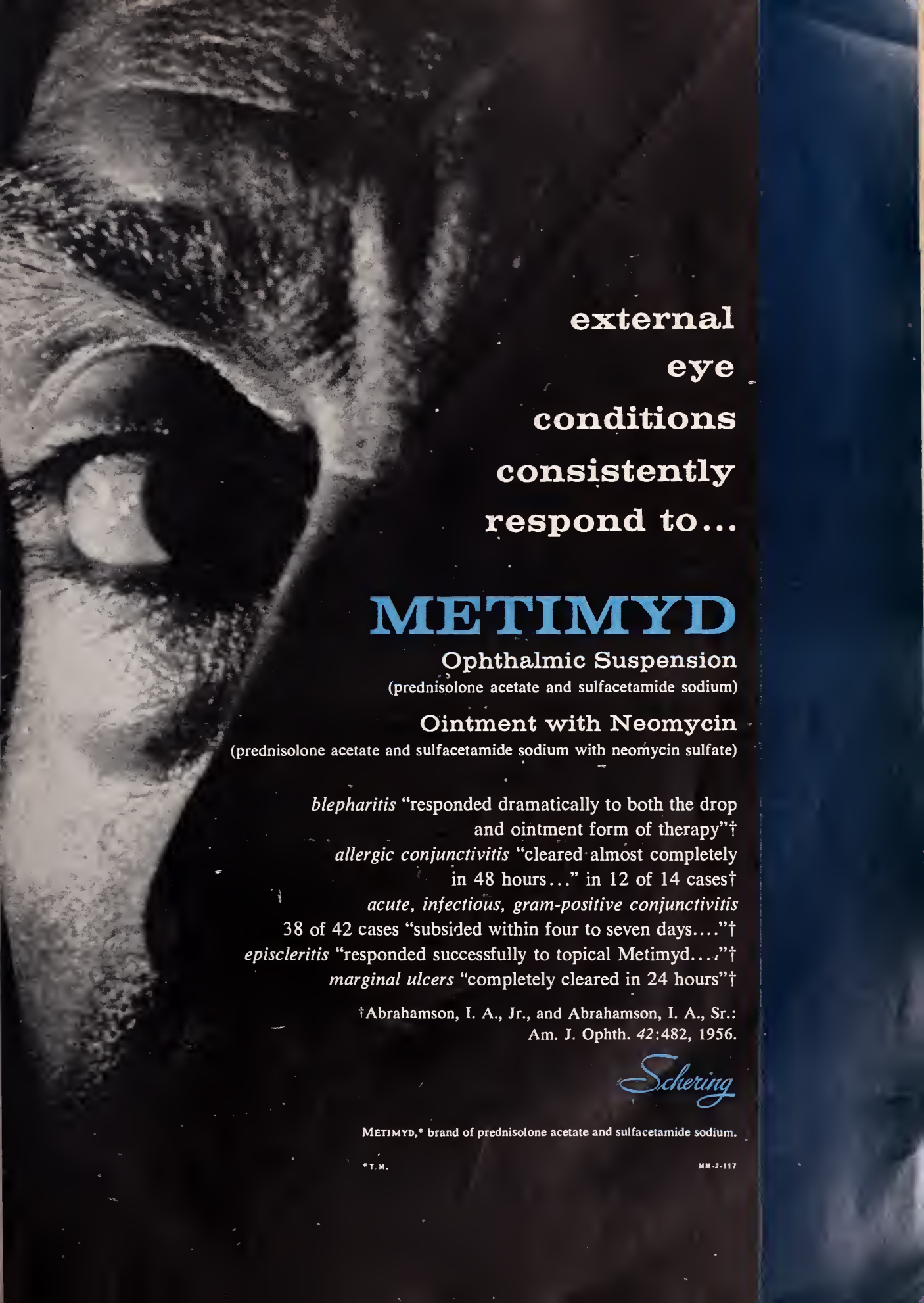
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JANUARY, 1957

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FREEDOM IN MEDICAL PRACTICE ADDRESS OF THE PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION

DWIGHT H. MURRAY, M. D.
NAPA, CALIFORNIA

Almost six months have elapsed since we last met to deliberate and act on medical affairs. The time has passed quickly, but not quietly.

The rumble of war and revolution has resounded in our ears. The din from political battles has been deafening.

All of us . . . sooner or later . . . learn that today's events do not just swirl around us, but involve each of us. As doctors we cannot get away from them by claiming that our only interest is in the sick, and that we cannot be bothered by political, social and economic problems. These matters demand attention from the doctors as well as the lawyer, the businessman, the newspaper editor, the labor leader and the worker.

If we are concerned about what happens on the international, national and local fronts—and we should be—then certainly we cannot afford to be disinterested in what happens in our own area of health and medical affairs. Yet there is apathy in our ranks.

* Presented at the opening session of the House of Delegates at the Clinical Meeting of the American Medical Association, Seattle, Washington, November 27, 1956.

REPLACE APATHY WITH ACTIVE, UNITED PROFESSION

Today there is a greater need for a united, forceful and informed profession than ever before. We have been caught in the throes of a social revolution which demanded something for nothing. Changes have been taking place all around us, and medicine has not escaped unscathed.

For example, in a few days Public Law 569, the bill providing medical care for military dependents, becomes effective throughout the land. Contracts already have been signed with the government by the majority of our state societies. No longer can any doctor claim that this law does not affect him. No longer can he say that government laws really are not changing the practice of medicine.

Public Law 880, better known to all of us as H. R. 7225, is another case in point. Medicine now is facing the problem of protecting the taxpaying public from abuses and of cooperating with the government to carry out the provisions of the law. The law is now on the books, and we must provide the leadership necessary to make it work as well as possible.

It was encouraging to hear Ezra Taft Benson, Secretary of Agriculture, say last week before the American Association of Land Grant Colleges and Universities:

"Sooner or later, the accumulation of power in a central government leads to a loss of freedom . . . Raids on the federal treasury can be all too readily accomplished by an organized few over the feeble protests of an apathetic majority. With more and more activity centered in the federal

government, the relationship between the cost and the benefits of government programs becomes obscure. What follows is the voting of public money without having to accept direct local responsibility for higher taxes . . .

"If the present shift of power from state to federal authority which started 25 years ago is allowed to continue, the states may be left hollow shells."

It was encouraging to hear such comments from a member of the President's Cabinet. I only wish that all members of the official family, and more important, every member of the United States Congress, felt the same way.

The expression of this philosophy, with which medicine so heartily agrees, sounds good, but putting it into practice is the thing we are really interested in.

Today the medical profession along with business and industry is caught between those who desire to promote sound government programs and those who desire even more intensely to perpetuate party power. Unfortunately, in recent years a benevolent federal government appears more attractive to the voting public than the preservation of individual freedoms. Medicine must do its utmost to reverse this trend.

MEDICAL FREEDOM ESSENTIAL

In my travels around the country as your representative the last eighteen months, I have seen little dissension or rancor within our ranks. However, I must report that I have seen too much complacency over governmental encroachment into medical affairs. And I am deadly serious when I say to you that apathy by the few, or by the many, can be detrimental to all.

No nation can merely reap the benefits of freedom; it also must sow seeds of freedom.

In medicine the situation is the same. If an apathetic medical profession takes its freedom for granted, it will be the beginning of the end. A strong, free profession must work for freedom so that it may live in freedom. And history tells us that once medicine loses its freedom, other fields of private endeavor are immediately in danger.

I do not wish to paint a dark or distorted picture of medicine's free status and its stature in America today. But I do believe words of caution and an appeal for vigilance are in order.

The road of apathy and disunity can only lead to disorder and perhaps disintegration, and we must sound a warning to all our colleagues who don't care, or who are pulling in the opposite direction. The road of alertness, action and unity is the proper road for all of us to be traveling together.

If I had just one wish for the coming year, it would be to command the time and talents of the 160,000 physicians in the American Medical Association. I would set us all to the task of emphasizing and reemphasizing the absolute necessity of patient and professional freedom.

PATIENT'S RIGHT TO CHOOSE HIS DOCTOR

I believe it is one of our prime responsibilities to prove to our patients that their right to choose their doctor is a most important one.

Free choice brings a bond of confidence between doctor and patient which no compulsory medical system can create. It means that the patient knows the physician will be interested in him as a person, not as just a serial number or the 2:45 appendicitis case.

For the doctor free choice means that the patient has selected him for his abilities, training, sincerity and personality. When a patient comes into my office, I know he has made a choice. And from that moment there begins a physician-patient relationship of the highest order. To me the patient is someone special, and I in turn hope that I am someone special to him.

Once the patient has made his choice, the physician automatically assumes an unqualified responsibility to the patient. No system of medical care that uses a third party to bring doctor and patient together can match our kind of cooperative performance for the treatment of illness, the cure of disease and the betterment of the patient's health.

Freedom to select a doctor is part of everyone's great freedom to choose—to choose what he wears and eats; where he works and worships, and how he votes. Take away any part of this freedom and great damage is done to our democratic system.

FREE CONDUCT IN MEDICAL TREATMENT

Another freedom closely tied to freedom of choice is freedom in the conduct of medical treatment.

At the recent meeting of the World Medical Association in Havana, Cuba, Dr. Rolf Schloegell of Germany made a stirring defense of free conduct of medical treatment. He told us that the medical profession believes the attending physician alone is competent to decide what measures he deems necessary and will apply in order to bring about the desired improvement. He warned too of the danger of excessive restriction on the freedom of the patient and the attending doctor.

Yet the trend toward extending social security in the medical care field has been steady and has accelerated since the end of World War II.

The dangers of shifting responsibilities for medical care from the patient and doctor to the government are obvious. The caliber of medical care cannot be as high when both patient and doctor are dependent upon government. Initiative succumbs to dictation, and self-reliance is replaced by the crutch of government.

We do not deny that there is an area of legitimate concern by the government for the health and welfare of the people. But each year government seems to extend that area. We get some idea of this expansion from the new federal medical budget.

This year, according to our Washington Office, the average family will be paying \$54.61 for the U. S. Government's health and medical activities. And the total expenditures this year amount to 2½ billion dollars—290 millions more than last year. Even in an overall federal budget of 61 billion dollars, the total cost of 2½ billions

is not insignificant. It is a billion dollars more than the cost of running the Commerce Department, half a billion more than the Agricultural Department and six times more than the Interior Department's budget.

Many expenditures obviously are necessary to keep up our unsurpassed public health standards, and research may pay rich dividends in scientific discoveries. But there is no doubt that much money is being spent on medical activities that should not involve government participation.

The trend is to spend more and more government money on health and medical matters because it is good politics. Apparently many Americans still want to see government in the role of a big brother, dishing out so-called gifts and bargains under the guise of benevolent economic planning.

I believe it is our duty, as it is everyone else's, to combat the attitude of "what's in it for me?" and to promote the long-honored creed of "what's best for all Americans and our free society." I think that a nation can drift into state medicine inch by inch just as surely as if the scheme were foisted upon a people overnight. The "drift" method may take longer but the result will be the same.

So it is time all of us sounded the alarm against soft and superficial security against the invasion of personal responsibility. It is time we stood up together for militant freedom and for full rights and responsibilities of the individual.

BELGIAN DOCTORS TURN BACK GOVERNMENT

There is no better example of what a unified medical profession can do than in the story of the recent fight of the Belgian doctors against the government's proposals for a state service of medicine.

Without consulting the medical profession the Belgian government proceeded to draft rules and regulations of health to be incorporated in the nation's social security legislation. Under the proposals doctors were to sign an agreement to abide by the

present rules and any later regulations. For the patient there would be the usual red tape in getting medical care.

When the Belgian doctors learned of the scheme, they met in conference with the government. They told the government what they wanted and what they would not accept. The government agreed.

For several months everything was quiet. Then the Belgian doctors suddenly read about the new health bill that the government was sending to Parliament. It was quite contrary to the earlier agreement worked out by the profession and the government. But the bill was passed quickly.

The Belgian medical profession protested and said it would not be placed under the Ministry of Labor. Instead the doctors proposed to set up their own plan of medical assistance.

Before long, the government saw that the medical profession meant business and that the doctor's plan was an attractive one. So it declared that its own bill was not in force and could not be in force without the consent of the medical profession.

To me this fight against legislative intervention in medical care is excellent evidence that the profession can defend itself if it unites to defend the basic principles of freedom and if it offers constructive proposals. By using the Belgian national motto, "in union there is strength," the medical profession showed doctors everywhere that dangerous government plans can be turned aside by the strong.

I also read recently in the *Journal of the World Medical Association* of the fight of the medical profession of Malta against a British government scheme to introduce a full-time salaried medical service, without the right of private practice, on an island dependency of Malta. Here again the doctors reacted with unity and strength, and successfully thwarted the government's plan.

There is a lesson in these stories from Belgium and Malta. They prove that a unified profession has a great political

power for good—the good of the patient, the doctors and the nation.

CONFIDENCE OF PATIENTS, UNDERSTANDING OF LEGISLATORS NEEDED

While we are developing unity within our own ranks, I believe it is equally important to continue to build up the confidence and respect of our patients, and to make our legislators aware of the necessity for freedom in medical practice.

Let us never reduce the quality of service we render to our patients, and never lose the personal touch in medicine. Where there is any opportunity to improve upon our medical care, let us seize it and show our abilities to do an outstanding job. Satisfied patient-customers will give us deserving support when we need it.

We should realize that the destiny of medicine can be determined to a large degree in the halls of Congress. If this be true, then it is even more important that we take an even greater interest in those who elect the Congressmen. Sympathetic understanding of our position by federal legislators through the voting public will be an insurmountable deterrent to the forces supporting state medicine.

The day has come, gentlemen, when we can no longer look upon medical economics and social changes merely as issues to be considered during our limited leisure hours. Our interest in them cannot be superficial or intermittent.

We now must pay daily attention to these matters. Medical socio-economic affairs can no longer be just incidental with us. They must be a vital part of our life and of our profession.

Each of us, I believe, should dedicate himself to the words included in the oath of office taken by Presidents of the A.M.A.

"I shall champion the cause of freedom in medical practice and freedom for all my fellow Americans."

As doctors, representatives to the A. M. A. and as spokesmen for the A.M.A., let's remember these words and live by them. And to alter a phrase of President Lincoln's only slightly: Let's make common cause to keep the good ship of medical

freedom on this voyage, or nobody will have a chance to pilot her on another voyage.

THE ACUTE ABDOMEN *

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The acute abdomen is a subject of vital interest to most practicing physicians. We may be called upon at any time to see a patient who is suffering from severe abdominal pain, the exact cause of which is not readily apparent. On a number of occasions, the decisions made in such a case by the responsible physician may greatly affect the patient's chance of recovery. Since there are no empirical rules or laboratory tests by which one may definitely establish a diagnosis, the problem becomes one of clinical judgment. At times the proper decisions in such cases may appear to be based primarily upon hunch; however, the experienced clinician carefully weighs the evidence gained from the history, physical examination, x-ray and laboratory studies. Often changes in the findings exhibited by the patient in the course of a few hours of careful observation may present the clue which helps solve the problem.

In this presentation some of the important principles relating to the establishment of the diagnosis in such patients will be reviewed. It was Pasteur who once said "In the field of observation chance never favors the unprepared mind". Therefore, if we continue to keep in mind the salient features of the problem we are much more likely to successfully manage our patients who have acute abdominal symptoms.

REFERRED PAIN

Pain is one of nature's most valuable signs since it immediately calls attention to the fact that something is wrong. All

of us know, however, that the trouble is not necessarily at the area where the patient is experiencing the greatest discomfort. Fortunately, the characteristic patterns of referred pain are often very helpful in establishing a diagnosis in patients with acute abdominal symptoms. Inflammatory disease in the appendix is often associated with either generalized or upper abdominal discomfort, in the early stages, and may only after a period of hours become localized in the right lower quadrant. The typical radiation of pain from the area of the kidney, along the course of the ureter to the external genitalia which is often seen in patients with nephrolithiasis is diagnostic and the proper recognition of this type of pain makes the difference between having the abdominal cavity opened or not in many patients. Similarly, gallbladder pain is frequently referred to the right scapular region.

Irritation of the diaphragm in many cases causes the patient to complain of great discomfort in the lower cervical region just above the clavicle. This may be a most helpful sign in certain difficult cases. I can recall an elderly woman, the mother of a prominent dentist, whom I saw in consultation about 10 P.M. in the hospital. This patient's complaint at the time was of rather generalized abdominal discomfort associated with slight distention, generalized tenderness but no rigidity. She was known to have diabetes and heart trouble and was said to have had gallbladder trouble demonstrated some years before. We considered the possibility of acute cholecystitis but the findings were not at all definite. Four hours later the patient began to complain of severe pain in the left lower neck and in the shoulder region on the left side. The pulse rate increased, the abdominal pain became more severe, and there was some increase in the distention. The referred pain caused us to feel the patient was suffering from irritation of the diaphragm secondary to a bile peritonitis. The abdomen was opened an hour later

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REFERRED PAIN, FROM AREAS OF ACUTE INFLAMMATION.

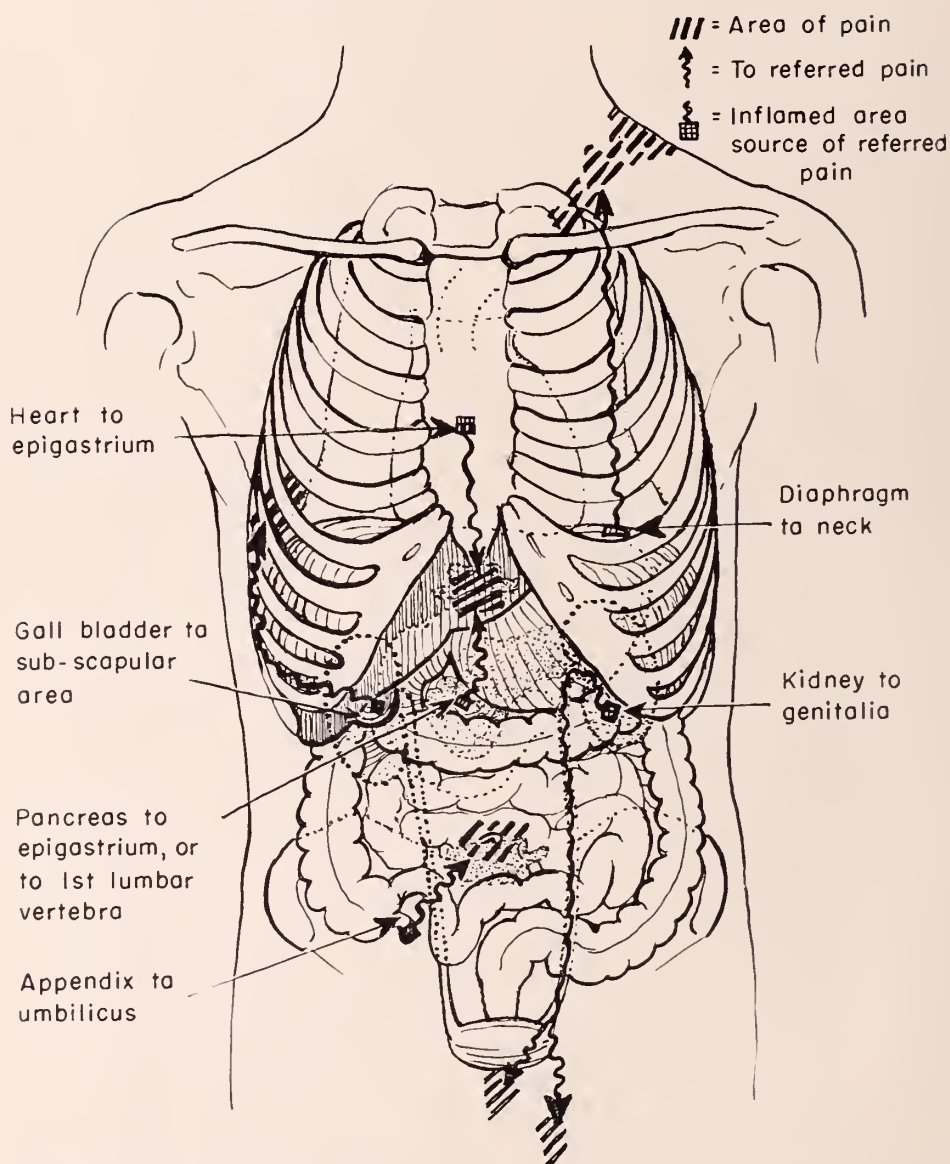


Figure 1. Diagrammatic representation showing some of the more common patterns of referred pain.

and the recently ruptured gallbladder with a large amount of bile in the free peritoneal cavity and beneath the left diaphragm was found. Recovery followed aspiration of the bile from the abdominal cavity and the suturing of a catheter into the gallbladder.

Pain produced by acute pancreatitis is usually in the epigastrium, very severe, and often radiates through to the back in the region of the first lumbar vertebra.

This pain may be indistinguishable from that produced by a duodenal ulcer which is perforating into the head of the pancreas. In such a case, a significantly elevated serum amylase, if in the early course of the disease, may establish the diagnosis as pancreatitis. Unless there is good evidence of biliary tract disease in such cases, the patient had best be treated by conservative measures.

Coronary thrombosis in certain cases is

associated with severe epigastric pain. Often there is associated distention and frequently upper abdominal tenderness is present. Such patients may exhibit paralytic ileus which occasionally causes such a patient to be operated upon under a mistaken diagnosis of intestinal obstruction. Similarly, coronary disease may at times mimic gallstone colic. If the clinician is aware of these possibilities, he is less apt to reach the wrong conclusion in a given case.

In most instances the cause of the pain being felt at a site distant to the pathologic trouble is related to the development of the nervous innervation of the area but this is not always the case.

The patient with physical findings suggesting acute appendicitis may actually have a perforated duodenal ulcer and gastric juice which has accumulated in the right lower quadrant may be producing

all the symptoms. A careful history will at least help the surgeon who has gone in for an appendix in such a case quickly to recognize the presence of gastric secretion and to investigate the area of the duodenum. Pain in the right side associated with hematuria in most cases signifies urinary tract disease. In some instances, however, an acutely inflamed appendix which overlies the ureter may be the cause of the hematuria.

ROENTGENOLOGIC AID IN DIAGNOSIS

In certain cases the x-ray film may give the answer in a short period of time, such as establishing a diagnosis of ureteral lithiasis in a patient with excruciating flank pain and hematuria.

The presence of free air under the diaphragm as seen in an upright chest film of a patient who may have a peptic ulcer tells us definitely that a perforation of a hollow viscus is present. The absence of

SITES OF POSSIBLE INTRA-ABDOMINAL HEMORRHAGE, WITH BLEEDING INTO PERITONEAL CAVITY.

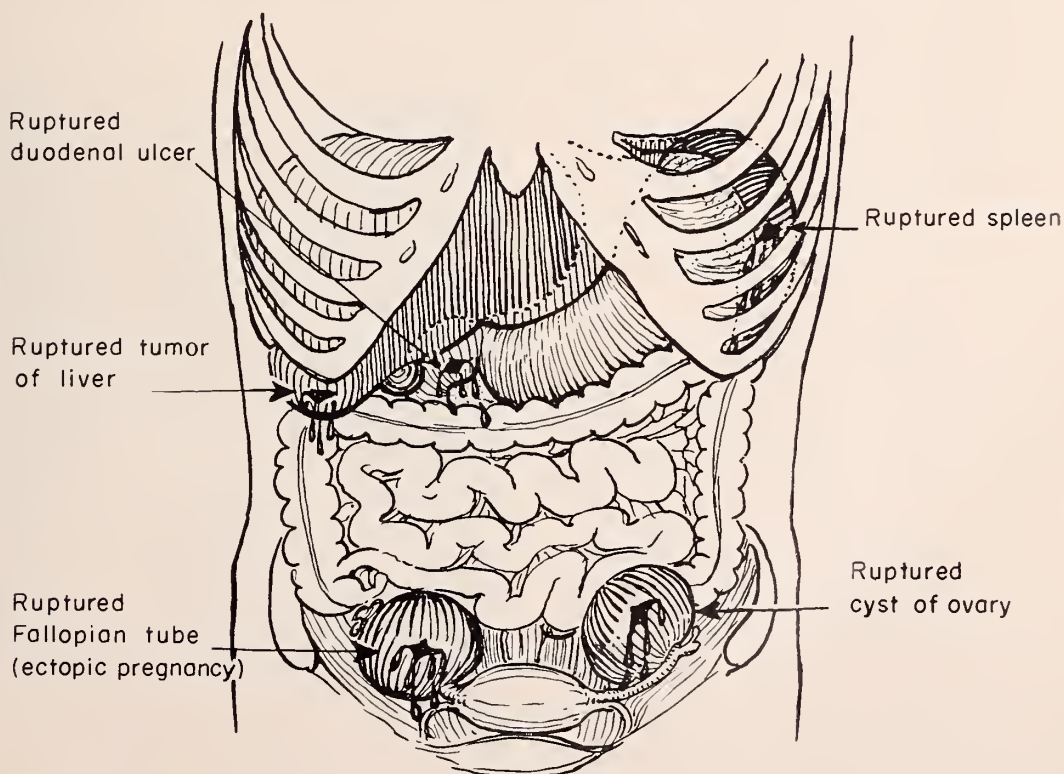


Figure 2. Drawing to illustrate some of the sites of concealed intraperitoneal hemorrhage.



Figure 3. Film demonstrates large amount of free air beneath the right diaphragm in an upright chest film. This patient had a perforated duodenal ulcer.

free air, however, by no means rules out such a possibility since about 20 per cent of patients with a perforated peptic ulcer may not show the presence of free air under the diaphragm in the upright chest film. A large amount of air beneath the right diaphragm presents a striking picture; however, even a very small amount of air carefully looked for may be seen and may settle the issue in a given case. One must not confuse free air with the stomach air bubble beneath the left diaphragm.

Acute intestinal obstruction is one of the most treacherous as well as one of the most serious causes of acute abdominal symptoms. A typical stepladder pattern of distended small bowel characteristic of mechanical obstruction is usually diagnostic. All of us at times, however, have seen a critically ill patient in whom the roentgenologist was unable to make a diagnosis of obstruction and yet a complete obstruction was found to be present, perhaps with some compromise of the blood supply of the bowel. Ileus may be extremely difficult to differentiate in certain cases from mechanical obstruction.

Occasionally an elderly patient will complain of low grade abdominal pain, gradually increasing constipation, and the inability to pass gas. A plain film of the abdomen may strongly suggest obstruction of the sigmoid due to carcinoma if the large and small bowel are distended. In such cases the patient at times will be found actually to have an ileus secondary to a ruptured appendix. If this possibility is kept in mind, the possibility of a mistaken diagnosis will be less likely.

Some of the most difficult decisions we are called upon to make occur in patients who receive a back injury and the question is raised as to whether or not an intra-abdominal injury requiring surgical intervention has also occurred. Abdominal pain, tenderness, and at times even board-like rigidity are seen in patients who suffer a severe back injury. The x-ray film may reveal distended loops of small bowel. Such patients are usually unable to be placed in position for an upright chest film; however, a lateral decubitus film may help determine the presence or absence of free air in the abdominal cavity as well as show evidence of the injury to the bony spine.

Retroperitoneal air outlining the kidneys and adrenal glands seen in a patient who suffered blunt trauma to the abdomen without perforation has enabled us to make a diagnosis of rupture of the retroperitoneal portion of the duodenum.

It is well to emphasize repeatedly that while the x-ray is helpful it may also be misleading and certainly its findings must be interpreted in the light of the patient.

Intestinal obstruction occurs perhaps most frequently as a result of adhesive bands existing within the abdominal cavity. More rarely it may result from volvulus, intussusception, and very occasionally from a gallstone which has found its way into the intestinal tract and is too large to pass.

Acute diverticulitis has often been described as a condition which produces symptoms and signs like appendicitis except that the findings are in the left lower

quadrant instead of the right. Diverticulitis more often occurs in people who have reached the fourth decade of life whereas appendicitis more often first causes trouble at a younger age.



Figure 4. Typical small bowel pattern as seen in patient with mechanical obstruction of small intestine secondary to adhesive band.



Figure 5. Plain film of abdomen demonstrating "bent inner tube" sign in patient with volvulus of sigmoid colon.

INTRAPERITONEAL HEMORRHAGE

Bleeding into the free peritoneal cavity or into the retroperitoneal space often produces severe pain as well as the symptoms of hemorrhagic shock. Abdominal pain following an injury to the left upper quadrant associated with pallor, a fast pulse, and falling blood pressure immediately makes one think of traumatic rupture of the spleen. It is exceedingly important to remember that in one case out of seven the hemorrhage following traumatic splenic rupture occurs hours to weeks after the injury rather than immediately. The splenic capsule may be torn followed by a slowly developing hematoma which at first may tend to be walled off by the omentum, stomach, and transverse colon. Later the bleeding becomes more profuse and occurs freely into the general peritoneal cavity. Splenectomy is indicated to prevent death from hemorrhage.

Intraperitoneal hemorrhage also may result from traumatic rupture of the liver, ectopic pregnancy, or from a ruptured corpus luteum cyst. The diagnosis of hemorrhage from a ruptured aortic aneurysm until recent years was only of academic interest. Now a number of these patients may be saved provided the patient is operated upon immediately and the aneurysm is excised and replaced by a graft.

ACUTE ABDOMINAL SYMPTOMS NOT RELATED TO SURGICAL CONDITIONS

It is exceedingly important to remember that a number of medical conditions at times may simulate the acute surgical abdomen. Mention of how coronary thrombosis may simulate the pain of ruptured ulcer or acute cholecystitis has already been made.

Acute abdominal symptoms occur often as a result of arachnoidism. The poison of the black widow spider, weight for weight, is fifteen times more potent than that of the rattlesnake. The muscle groups nearest the bite site go into a state of severe spasm which produces very severe pain. Since the spider bite itself is rela-

tively painless, it may be overlooked entirely as the cause of the symptoms. If the condition is kept in mind, however, unnecessary laparotomy is not likely to be carried out.

Sickle cell anemia is associated with acute abdominal symptoms at times which are most disturbing. In this disease there occurs thrombosis of small blood vessels followed by necrosis in the area involved. When this affects the intestinal tract it is easy to see how it may be confused with a surgical lesion especially since these patients also frequently exhibit fever, leukocytosis, and jaundice. A demonstration of the sickling trait plus an awareness of the condition usually enables one to come to the correct diagnosis. It must be borne in mind, however, that patients with sickle cell anemia may also have appendicitis, perforated ulcer, or acute cholecystitis.

Lupus erythematosus is not usually considered a cause of acute abdominal symptoms. Recently we saw a patient known to have disseminated lupus who was suffering from generalized abdominal pain, generalized abdominal tenderness, and some distention. The pain, after a period of observation, was believed to be due to the acute serositis the patient was developing. The problem was, of course, to decide whether the pain was an abdominal manifestation of the disseminated lupus or whether the patient had also developed some acute surgical condition.

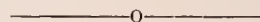
ACUTE APPENDICITIS

Lastly, acute appendicitis remains not only one of the most frequent but also at times one of the most treacherous causes of acute abdominal symptoms. The typical attack in a young adult male is usually very easy to diagnose. In some others, however, particularly the very young and the elderly, the diagnosis may be very difficult. Certainly none of us can afford to be overconfident or careless regarding the diagnosis of the condition which occurs in so many individuals at some time during the life span.

SUMMARY

The acute abdomen is of great impor-

tance to all practicing physicians since one may be called upon at any time to minister to a patient with such symptoms, the cause of which is not readily apparent. The early decisions made in such cases may greatly affect the patient's chance for recovery. No empirical rules exist for the categorical diagnosis of such conditions. Surgical judgment based upon careful attention to the history, physical examination, and appropriate laboratory studies will usually enable the physician to arrive at the proper conclusion. The physician who has a properly prepared mind by having previously reviewed the various possibilities in such cases is far more likely to guide his patient safely through the illness.



THE DIAGNOSIS AND TREATMENT OF ANORECTAL DISEASES*

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The scope of this paper includes the greater part of the field of proctology. Therefore, the discussion will be limited to the practical points of the anatomy, history, diagnosis, and treatment of the more common conditions.

HEMORRHOIDS

Hemorrhoids constitute a large part of the pathology seen by any proctologist. External hemorrhoids, varicosities of the inferior hemorrhoidal vein, are situated distal to the pectinate line and are covered by modified skin. They frequently appear in combination with internal hemorrhoids. Symptoms are usually due to thrombosis. The vessel ruptures, forming a painful tumor beneath the skin. These manifest themselves by sudden swelling as contrasted with the gradual swelling of an abscess. They are usually the result of some sudden exertion. The bluish clot is frequently visible through the skin. If solitary, these may be removed in the office by injecting novocain deep into the

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clot, excising a generous area of skin, and removing the clot. Usually pressure will stop the ooze. If there are numerous clots, with edema, prolapse, and associated internal hemorrhoids, a hemorrhoidectomy may be done at once. Waiting until the edema and thrombosis have subsided is unnecessary.

Internal hemorrhoids are varicosities of the internal hemorrhoidal plexus, a radicle of the superior hemorrhoidal vein. They appear as right anterior, right posterior, and left lateral hemorrhoids, because the right superior hemorrhoidal vein divides into a right anterior and posterior branch, while the left remains undivided. However, there are often secondary hemorrhoids between the primary ones. The treatment of large or complicated internal hemorrhoids is surgical removal. The type of operation depends entirely upon the surgeon. A procedure in which large numbers of sutures are used frequently results in more complications. The injection treatment of internal hemorrhoids should be limited to those which are small, uncomplicated, and bleeding.

CONDYLOMATA

Condylomata accuminata, often called venereal warts, are overgrowths of epithelial tissue, cauliflower in shape, and usually on pedicles. They must be differentiated from condylomata lata, which are venereal in origin. They may be treated either by fulguration, or, in less severe cases, by application of 25 per cent of podophyllin in mineral oil. Condylomata lata, a secondary manifestation of syphilis, are broad flat white elevations of the skin and are highly contagious. They may be single, but are more often multiple. The treatment is that of the underlying syphilis.

FISSURE

Anal fissure is a break in the skin of the anal canal, occurring posteriorly in 90 per cent of the cases. Cryptitis with edema of the skin and the weakness of the anal sphincter posteriorly cause anal fissure, although anal stenosis is a factor. Painful bleeding is symptomatic. The treatment is wet heat to relax the ex-

ternal sphincter, and, if the pain is severe, injection of a long-lasting oil soluble anesthetic. Anal ulcer is a chronic fissure, which is invariably infected. The treatment of this condition is surgical. The cauterization of anal fissures or ulcers by the use of silver nitrate or the actual cautery causes fibrous tissue formation. This prevents proper healing and results in recurrence.

STENOSIS

Anal stenosis or pectinosis, a narrowing of the anal canal, is frequently wrongly diagnosed as rectal stricture. This condition either follows a surgical procedure in which follow-up treatment is omitted and medication to produce liquid bowel movements is given, or it is the result of an infection. The anal area just below the pectinate line is the narrowest portion and is surrounded by fibrous tissue containing the lymphatics draining the pectinate line and crypts. Any condition such as cryptitis, papillitis, or anal ulcer will develop inflammation, proliferation of the connective tissue, and resultant anal stenosis. The treatment is either surgery or dilatation. The latter is rarely satisfactory; therefore, an operative procedure severing the stenotic area is usually necessary.

ABSCESSSES

Anorectal abscesses may be divided into infralevator and supralevator. The infralevator abscesses include perianal and ischioanal, and usually arise from infected crypts of Morgagni, anal glands, fissures, or foreign body injuries. The symptoms are pain, swelling, and redness. The diagnosis is made by palpation. The treatment is early incision and drainage. The patient should be informed of a probable resulting fistula. The incision should be made outside of the anal sphincter, parallel to its fibers, and as close to the pectinate line as possible. Only in rare instances is it feasible to open the abscess and unroof the tract to its internal opening. The supralevator abscesses are submucous, pelvirectal, and retrorectal. The submucous abscesses may be opened into the bowel lumen. Pelvirectal and retrorectal abscesses are caused by extension

of submucous or ischioanal abscesses, injuries to the bowel wall, or ulcerative processes. The symptoms are more vague and associated with systemic reaction. The diagnosis can usually be made by digital examination. The treatment is incision and drainage. Incise outside the rectal wall and through the levator muscle. Pack the abscess cavity.

FISTULA

Anorectal fistula is a tunnel or abnormal communication between the anorectum and some other cavity or the outside skin. For this discussion anorectal fistula will be limited to the skin surface. Fistulae are always preceded by abscess formation. Before surgery, the internal opening of the fistulous tract should always be determined, and if that is not possible, the fistula allowed to abscess again before surgery. Adequate surgical treatment consists of unroofing the entire tract. In extensive fistulae, especially those deep to the entire sphincter, a seton should be employed, and in no case should the tract be packed. Careful postsurgical follow-up, accompanied by probing to rule out bridging, is essential.

PRURITIS ANI

Pruritus ani is one of the most persistent and troublesome conditions with which the proctologist has to deal. The etiology is not known, but there is an alteration in the anal and perianal skins caused by irritation or inflammation of the nerve endings. The itching is intense; scratching and rubbing cause additional skin damage. In the weeping stage, applications of one to ten Burow's solution as a soak are helpful. In the chronic stage, applications of tincture of iodine, tincture of merthiolate, and Castellani's paint are sometimes beneficial. The daily local application of small amounts of hydrocortisone ointments give a higher percentage of good results than any other local treatment. The resistant cases can usually be alleviated by clearing up all anorectal pathology and then either alcohol injection or the undercutting operation. However, even the results from these are not

always permanent, and alcohol injection is fraught with the danger of slough.

CRYPTITIS

Cryptitis, an infection of the crypts of Morgagni, is often the forerunner of proctitis and abscess formation. It is also an etiological factor in anal fissure and pruritus ani. The diagnosis is easily made by examination of the anal canal with a speculum and the use of a hooked probe. Treatment with local applications of mild anesthetic solutions or ointments, such as Furacin, is of value. However, deep infected crypts are best treated by incision and drainage to the outside. Papillitis, or inflammation of the anal papillae, is, as a rule, associated with cryptitis. Anal papillae, found at the pectinate line, are covered by modified skin, and in the presence of infection hypertrophy and become painful. They should be removed by fulguration or excision.

BENIGN TUMORS

Under benign tumors of the rectum, only two conditions, villous papilloma and adenomatous polyps, will be mentioned. Villous papilloma or adenoma are usually large soft tumors with numerous frond-like projections. They excrete large amounts of mucus, bleed easily, and may cause considerable straining at stool. The feel and appearance are diagnostic. They frequently undergo malignant degeneration and should be removed. The smaller ones can be fulgurated; the large ones can occasionally be removed if there is a long pedicle, but abdominoperineal resection is often necessary. Adenomatous polyps are premalignant lesions and should be removed in all cases. The small sessile polyps can be fulgurated easily and need not be biopsied. The pedunculated polyps should be biopsied; the base can often be fulgurated and the whole polyp sent to the laboratory. However, where the sessile polyp is large, it may have to be fulgurated in stages and several biopsies taken to rule out malignant cells.

CARCINOMA

Carcinoma of the rectum should be suspected when there is daily passage of

small amounts of blood and mucus. Rarely is any severe hemorrhage encountered. The treatment of carcinoma of the anal canal and rectum is surgical. The operation of choice is an extensive abdominoperineal resection.

ULCERATIVE COLITIS

Chronic ulcerative colitis is only mentioned here as a warning against any extensive anorectal surgery. Even in quiescent periods, surgery of the anorectal area should be limited to emergency surgery, such as the incision and drainage of abscesses.

WOUNDS

Anorectal wounds are different from any other wounds of the body in that they cannot be sutured. They have to be allowed to granulate in most cases. Therefore, the follow-up care is essential to insure good results.

REFERENCES

1. Zimmerman, Karl: *Office Proctology*. Reuter & Bragdon, Inc., Pittsburgh, 1954.
2. Bacon, Harry Elliott: *Anus-Rectum-Sigmoid-Colon—Diagnosis and Treatment*, Third Edition, Volumes I and II, Lippincott & Company, Philadelphia, 1949.

GASTROINTESTINAL COMPLICATIONS ENCOUNTERED DURING ADRENOSTEROID THERAPY *

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The early literature on adrenosteroids depicted therapeutic conquest; even early recognition of their limitation and untoward side effects did not deter the aggressive therapist. More general usage was accompanied by abuse. Many of the disasters have occurred during proper

medical management of a disease. Unfortunately, iatrogenic entities have been precipitated by injudicious use of adrenosteroids because of failure to exact a specific diagnosis or reluctance to recognize and cope with the problems of a severe illness. Whether or not the entities encountered and so routinely listed as complications to adrenosteroid therapy are genuine or merely concomitants of the disease is not always satisfactorily established.

The more common untoward effects of adrenosteroids often occur in multiplicity. In an analysis of 260 ambulatory patients under prolonged steroid therapy (beyond six months) undesirable reactions apparently precipitated by these agents included five concomitant or possible complicating gastrointestinal disturbances (Table 1).

TABLE 1
UNTOWARD EFFECTS ASSOCIATED WITH
ADRENOSTEROID THERAPY
(260 AMBULATORY PATIENTS)

Untoward Effect	No. Cases
Facial rounding	67
Dependent edema	
Transient	48
Persistent	23
Hypertension	29
Glycosuria without hyperglycemia	24
Hyperglycemia	19
Hirsutism	
Mild	18
Severe	4
Acne	7
Allergy to ACTH	6
Psychoses	4
Demineralization fractures	3
Electrolyte disturbances	3
Duodenal ulcer hemorrhage	2
Duodenal ulcer	1
Gastric ulcer perforation	1
Diverticulitis with perforation	1

These included acute duodenal ulcer in a chronic dyspeptic patient, which healed promptly on discontinuance of meticorten, hemorrhage in 2 patients known to have a duodenal ulcer and in whom intractability, previous hemorrhage and perforation had occurred, perforation of an acute gastric ulcer in a patient not previously investigated gastrointestinally, and silent perforation of diverticulitis of the sigmoid in a severely ill cirrhotic patient be-

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ing treated with ACTH for precomatose manifestations. In addition, there were 19 patients in this series in whom vague dyspeptic complaints, primarily pyrosis, developed but in whom no gastrointestinal dysfunction or disease was demonstrable (Table 2).

TABLE 2
GASTROINTESTINAL DISTURBANCES
ENCOUNTERED DURING ADRENOSTEROID
THERAPY

Peptic ulcer "creation"
Gastric, duodenal, and anastomotic
Peptic ulcer reactivation
Gastric and duodenal
Peptic ulcer complication
Hemorrhage
Perforation (but no instance of obstruction)
Perforation of diseased bowel
Chronic ulcerative colitis
Regional enteritis
Meckel's diverticulum
Diverticulitis
Perforation of diseased gallbladder
Masked
Exacerbation or development of ulcerative esophagitis
Phlegmonous gastritis
"Masking" of peritonitis

Peptic ulcer.—The development, recurrence, or complication of a peptic ulcer has been rendered conspicuously prominent as a concomitant of adrenosteroid therapy by the bold hypothesis of Gray. Gray and associates¹ have attempted to correlate hormonal induced gastric hypersecretion of acid and pepsin with the occurrence of ulcer, suggesting a causal relation between adrenosteroid therapy and development of peptic ulcer. This provisionally adopted concept has been accepted as dictum by some^{2,3} and as conjecture by others.^{4,5} It has provoked revision of etiologic thought, controversy, and deliberation. (Fig. 1).

Confusing the issue and frustrating to the proponents of the hormonal etiologic factor are the reports of the quiescence and healing of peptic ulcer during administration of hormones.^{4,5} The true incidence of peptic ulcer in our general population may preclude the assumption of causal phenomenon and indicate merely concomitancy. Peptic ulcers have been

GRAY'S CONCEPT OF HORMONAL INDUCED PEPTIC ULCERS

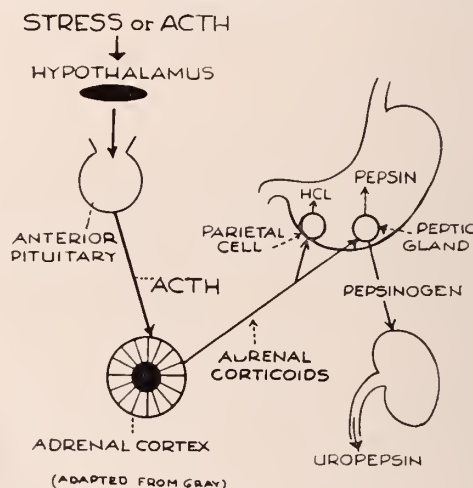


Figure 1

noted after the use of drugs commonly administered with adrenosteroids, i.e., cinchophen (phenylcinchoninic acid), colchicine, some salicylates, butazolidin (phenylbutazone). Occurrence or complication of ulcer has not been correlated with dosage or duration of therapy. Furthermore, some patients with ulcer are prone to complication; Casey⁶ encountered previous complication in 86 per cent of patients prior to the terminal disaster. In evaluating stress as an ulcer activator, Casey⁶ was able to demonstrate such correlation in 16 out of 102 cases, and in only 2 (1.9 per cent) was this stress related to administration of adrenosteroid therapy. Wollaeger⁷ evasively concludes that "under certain circumstances and in certain individuals the hormones appear to play a determining role in producing ulcers."

Seemingly confirmatory of Gray's hypothesis has been the reported incidence of ulcer during administration of corticotropin, ACTH, and cortisone,^{1-5, 8-76} although it did not always necessitate cessation of therapy.^{3, 5, 16, 17, 24, 29, 41, 65, 66} Summarization of these publications, however, indicates that occurrence or recurrence of ulcer or precipitation of ulcer complication is more the exception than the rule. Among over 1738 patients on prolonged administration of cortisone or ACTH, or

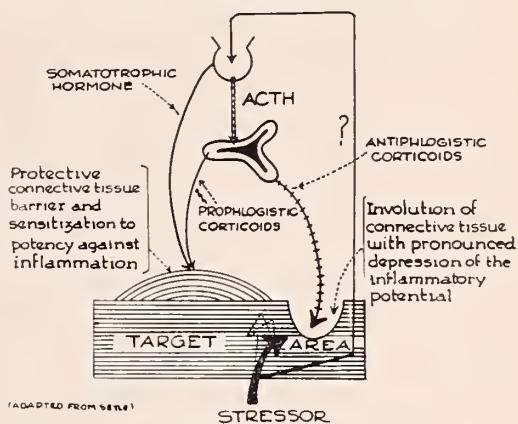
both, there were 101 (5.8 per cent) peptic ulcers encountered, of which 76 (4.4 per cent) were presumed to be new. The spontaneously recurrent nature of peptic ulcer would seem to be consistent with this low reactivation incidence of 1.4 per cent during treatment of any illness.

These figures are further depreciated by the incidence of ulcer of 9.8 per cent, which represents an average figure of the estimates reported in various publications.⁷⁷⁻⁸⁸ When, in addition, one considers that hormones are primarily used in arthritic patients, it is of interest to know the influence of this disease on the digestive tract. Bauer⁸⁹ has encountered an incidence of ulcer of 6.5 per cent in male arthritic patients, and Ragan⁹⁰ has estimated the frequency of ulcer to be 6 to 8 per cent among rheumatoid patients. Gastrointestinal functional abnormalities are also frequently encountered in roentgenographic study of arthritic patients.⁹¹⁻⁹⁵

All ulcers, moreover, are prone to complication. The incidence of perforation has been reported by Edwards and Jennings⁹⁶ to be as high as 14 per cent; an average figure compiled from several publications is 7.6 per cent.^{83, 97-105} Nevertheless, reports of perforation in patients with ulcer who had been treated with adrenosteroids are startlingly numerous.^{2-5, 8, 9, 15-76} Hemorrhage is also a common occurrence, with an incidence of 16.8 per cent reported by Edwards and Jennings.⁹⁶

The "story of the adaptation syndrome" describes stress of specific form but arising from no specific cause^{106, 107} (Fig. 2). Increased ACTH secretion, adrenal cortical stimulation to increased corticoid production, eosinopenia, anti-inflammatory effect, lymphatic atrophy, and tendency to peptic erosion of stomach and duodenum may result from such stressors as trauma, tension, infection, thermal exposure and exposure to roentgen-ray and is also hypothesized to be reproducible by ACTH and cortisone administration. The theorization has dramatic appeal and can readily be visualized as an explanation for such acute erosions as Curling's ulcer and the "air-

SEYLE'S CONCEPT of STRESS and ADAPTATIONS



raid ulcer." Its relation to the true gastric ulcer, however, is not so readily acceptable in view of the characteristic lack of hyperchlorhydria and hyperpepsinia in this entity. The only confirmatory evidence is the empiricism that peptic ulcers develop and exacerbate under stress,¹⁰⁸ but they do so seasonably and possibly under such vague influence as thermal and astronomic changes.¹⁰⁹

The adaptation syndrome, although interesting, is complex and not as easily analyzed as some believe. The human being is an equally complex reactor, and whether or not his anterior pituitary gland predominantly secretes stimulation to more anti- and prophlogistic corticoids or sufficient somatotrophic hormone is not measurable by any presently available investigative mode. There can obviously be great individual variation in the relation of ACTH and cortisone therapy to ulcer potentiation. This variation can probably be explained on the basis of the omissions in Gray's chart, which result in emphasis of the positive influence and disregard of the neutralizing factors. Gray's chart is etiologically enlightening as to why one encounters new "acute" ulcers, reactivated pre-existing ulcers, and the complications of both. Experimentally, granulation tissue is a protective barrier to peptic digestion; however, strong stressors or administration of antiphlogistic hormone removes this resistance.¹⁰⁶ It appears that Gray's postulates should not be

stated with such definitiveness; the degree of reservation in one of his later statements should be requoted: "We do not see ulcers in a majority of the patients who have been on large doses of ACTH and cortisone for long periods."⁶⁹ Actually, a more accurate estimate of the incidence would seem to be approximately 5 per cent.⁷⁰

Furthermore, it is our impression that not all gastrically normal patients or ulcer patients respond to stress induced by emotional, physical, or hormonal factors in the fixed pattern indicated in Gray's work. Our attempt to duplicate his observations with the use of routine dosage of meticorten and meticortelone in proved adrenal stimulation was unsuccessful.¹¹⁰ We found anticipated human variables in 202 case studies; some patients adhered to Gray's concepts, some were indifferent to stress, and some sought a middle pathway. This concurs with our analysis of individual reaction to stress and reflects the personality of man as he responds to his environs.

To test the point further, we gave these drugs to 13 patients in whom there was established duodenal ulcer activity or who had just recovered from complications. Here again, variables were encountered. Some ulcer patients with expected high initial uropepsin excretion responded to adrenal stimulation with a sustained, more elevated excretion of uropepsin; in others the stimulation to increased secretion was transient. Not all active duodenal ulcers, even in the presence of complication, were associated with a high excretion of uropepsin. Ulcer healing, both gastric and duodenal, was achieved during administration of meticorten and meticortelone in patients with a sustained high excretion of uropepsin as well as in those in whom the stimulation to uropepsin excretion was not remarkable. In our patients there was no evidence whatever of sustained stimulation to hydrochloric acid.

With our present knowledge and temerity, we cannot advocate a more radical or conservative stand than that of Thorn:⁶³

"In the presence of an active ulcer the administration of cortisone is contraindicated. If a deformity indicative of a healed lesion is discovered, hormone therapy may only be undertaken if the indications for its use are carefully evaluated and accepted measures for ulcer management are instituted." However, if the indication for the use of the hormone exceeds the risk and the need is short-termed, we dismiss Thorn's first statement as irrelevant in view of case individualization.

Perforation of diseased intestine in association with hormone therapy has been repeatedly reported in patients with both chronic ulcerative colitis and regional enteritis.^{28, 60, 111-114} Delayed postoperative jejuno-ileal perforation has been projected as a hormonal effect in patients who have had ileostomy for ulcerative colitis.^{28, 111} The mechanism may be explained on the basis of suppression of inflammatory reaction (antifibroplastic action) by predominant antiphlogistic corticoid stimulation over prophlogistic and somatotropic hormone elaboration.¹⁰⁷

In our review of 86 cases of chronic ulcerative colitis and 18 cases of regional enteritis, despite the necessity for extensive surgical intervention in 32 patients, perforation was recorded only in the patients with regional enteritis on the anticipated basis of enteroenteral and enterocutaneous fistulae. It was also observed in 2 patients with severe, fulminating chronic ulcerative colitis, massive hemorrhage, and multiple perforations who died within seventy-eight hours after hospital admission without the beneficial or deleterious effect of hormonal therapy.

The possible creation of *giant colonic ulcers* in ulcerative colitis by steroids is suggested by Ruffin and associates.^{62, 115} These are specifically different lesions in appearance and structure from the ulcerations characteristic of the disease. Ulcers of such description were also encountered by Sauer and associates⁶⁰ in patients not considered to have ulcerative colitis who were given adrenosteroids for rheumatoid

arthritis. We have encountered 2 such patients who never received hormone therapy but did have antibiotic drugs. Perhaps the basis for such occurrence as Ruffin and Sauer described might be considered to be the result of dominant anti-phlogistic corticoid stimulation. If we are correct in correlating our occurrences with antibiotic therapy, perhaps it is a question of creation of altered bacterial flora or lowered host resistance.

Only one report of *rupture of a diseased gallbladder*¹¹⁶ has been published. Acute cholecystitis may conceivably occur during, or be masked by, cortisone therapy or it may be misdiagnosed and erroneously treated so as to permit development of gangrene with perforation. The indictment should be against the diagnosis and injudicious use of cortisone; the diagnostician, and not his therapeutic agent, should be convicted.

Rupture of Meckel's diverticulum has occurred in association with adrenosteroid therapy, but the attempt to correlate these is not understood.

Exacerbation or development of ulcerative esophagitis, reported by Sauer and associates,⁶⁰ is accepted too casually as a complication of cortisone administration. Their patient was a debilitated rheumatoid victim with regional enteritis who had Miller Abbott intubation and antibiotic therapy for enteric perforation, peritonitis, and bronchopneumonia, any of which may have caused the esophagitis.

We have administered meticorten over prolonged periods to 12 patients with erosive esophagitis in a study of therapeutic response and uropepsin excretion. Nine patients enjoyed improvement and symptomatic response during the period of treatment with meticorten, whereas the other 3 showed evidence of accentuation of manifestations without complication. There was no case of established hydrochloric acid or pepsin secretory stimulation.

Phlegmonous gastritis as a complication of cortisone therapy is a rare entity that may conceivably arise from a disturbance

in host resistance.¹¹⁷ The occurrence of such bizarre illness predated steroid therapy and has thus far defied etiologic explanation.

Masking of peritonitis by absence of fever, abdominal rigidity, and severe pain is truly hazardous when these hormones are injudiciously employed prior to establishment of an accurate diagnosis.^{28, 114, 118, 119} Such occurrences may certainly be overlooked during routine hormone therapy if the clinician does not follow his patient well, carefully evaluate new syndromes, and remain aware of the concealing power of these agents.

DISCUSSION

The competent, gastroenterologically minded internist should apply adrenosteroid therapy with relative impunity. Just as awareness of the electrolyte imbalance of intractable vomiting or diarrhea, or its counterpart, intubation with suction and enterostomies, is important, so are the patient's normal needs and those imposed by hormone therapy. When these agents are employed to combat a disease coexistent with a gastrointestinal entity susceptible to their untoward influence or when they are used as specific therapy for the gastrointestinal entity in which untoward effects may accompany beneficial influence, he must employ more caution. We use arsenic, digitalis, insulin, emetine, antibiotic agents, sulfonamides, anticoagulants, transfusions, intravenous liver extract, antipyretic agents, norepinephrine and quinidine, when the indications are adequate, realizing an appreciable risk. We should, similarly, continue to use adrenosteroids when they are indicated, for their side effects are no more frequent, are less likely to be specifically induced, and are probably preventable if proper precautions are exacted.

The admonition is to know the therapeutic agent, its advantages, and disadvantages. If the limitations of adrenosteroids are recognized and if the hormones are used intelligently, iatrogenic entities will rarely be created. When they are used in the actual or suspected pres-

ence of peptic ulcer, the regimen for this lesion should be used concomitantly, and when they are used in infectious diseases, a specifically indicated antibacterial agent is essential to the program.

CONCLUSIONS

The adrenosteroids may contribute to the recurrence or complication of a pre-existing gastrointestinal disease, but the causal relation has not been unequivocally established. Meticorten and meticortelone may be used with caution in the presence of peptic ulcer.

REFERENCES

- Gray, S. J., Benson, J. A., Jr., Spiro, H. M. and Reifenshein, R. W.: Effects of ACTH and cortisone upon the stomach; its significance in the normal and in peptic ulcer, *Gastroenterology*, 19:658, 1951.
- Halsted, J. A.: The effects of ACTH and cortisone therapy, *Gastroenterology*, 25:80, 1953.
- Freyberg, R. H. and others: Problems of prolonged cortisone treatment for rheumatoid arthritis, *J.A.M.A.*, 147:1538, 1951.
- Sandweiss, D. J., Saltzstein, H. C., Scheinberg, S. R., and Parks, A.: Hormone studies in peptic ulcer, *J.A.M.A.*, 144:1436, 1950.
- Forbes, J.: Inadvisability of giving ACTH to patients with gastric ulcer, *Lancet*, 2:555, 1952.
- Casey, J. H.: Deaths from peptic ulcer in Minnesota during 1952, *Minnesota Med.*, 37:448, 1954.
- Wollaeger, E. E.: Untoward effects of cortisone and corticotropin on the gastrointestinal tract, *Minnesota Med.*, 37:626, 1954.
- Kuzell, W. C. and Schaffarzick, R. W.: Cortisone acetate in thirty-two cases: Preliminary clinical observations, *Stanford M. Bull.*, 8:125, 1950.
- Thorn, G. W. and others: The clinical usefulness of ACTH and cortisone, *New England J. Med.*, 242:782, 1950.
- Engleman, E. P., Knikel, P., Welsh, J. E., Jr. and Molyneaux, M. G.: Experiences with cortisone given orally, *California Med.*, 75:1, 1951.
- Flink, E. P.: Cited by Gray, S. J. et al. *J.A.M.A.*, 147:1529, 1951.
- Forsham, P. H.: Present status of ACTH and cortisone in therapy, *M. Clin. North America*, 35:1229, 1951.
- Frazier, C. N., Lever, W. F. and Kenper, C. S.: Response of patients with malignant and benign pemphigus to adrenocorticotrophic hormone and cortisone, *Am. J. M. Sc.*, 222:308, 1951.
- Freeman, S.: Laboratory and metabolic effects of ACTH and cortisone on human subjects, *Mississippi Valley M. J.*, 73:74, 1951.
- Gray, S. J., Benson, J. A., Jr., Reifenshein, R. W. and Spiro, H. M.: Chronic stress and peptic ulcer. I. Effect of corticotropin (ACTH) and cortisone on gastric secretion, *J.A.M.A.*, 147:1529, 1951.
- Hench, P. S.: Proc. Conf. on the Effects of cortisone, Merck and Co., December 10, 1951, p. 56.
- Hollander, J. L. in discussion of Halsted et al in Mote, J. R., ed.: *Proceedings of the Second Clinical ACTH Conference*, Vol. 2: Therapeutics, New York, The Blakiston Company, 1951, p. 503.
- Jacobson, A. S. and others: Observations on the course of Hodgkin's disease treated with cortisone, *Bull. New York Acad. Med.*, 27:401, 1951.
- Kinsell, L.: Clinical application of pituitary adrenocorticotrophic and adrenal steroid hormones, *Ann. Int. Med.*, 35:615, 1951.
- Kirsner, J. B.: Discussion of symposium on ACTH and cortisone as related to the gastrointestinal tract, *Gastroenterology*, 19:729, 1951.
- Lubin, R. I. and others: Acute perforation of duodenal ulcer during ACTH and cortisone therapy, *Gastroenterology*, 18:308, 1951.
- Madden, R. J. and Ramsburg, H. H.: Adrenalectomy in the Shay rat, *Gastroenterology*, 18:128, 1951.
- Mischbach, W. D., Zemke, E. M., Hammarsten, J. F., and Heller, B. I.: Acute perforation of duodenal ulcer during ACTH and cortisone therapy, *Gastroenterology*, 18:308, 1951.
- Ragan, C.: Wound healing, surgical conditions, ulcers, Proc. Conf. on the Effects of Cortisone, Merck and Co., December 10, 1951, p. 54.
- Rawls, W. B. and Ancona, V. C.: Selected clinical observations of the effect of cortisone and ACTH as a guide for individualized dosage, *New York State J. Med.*, 51:1625, 1951.
- Rose, B.: Proc. Conf. on the Effects of Cortisone, Merck and Co., December 10, 1951, p. 56.
- Rowe, A. Jr., Lamb, G. R., Taylor, F. B. and Kinsell, L. W.: Experience with ACTH and cortisone in private practice, *California Med.*, 75:11, 1951.
- Sloan, S., Briggs, J. D. and Halsted, J. A.: ACTH therapy for ulcerative colitis complicated by perforation of coexisting peptic ulcer, *Gastroenterology*, 18:438, 1951.
- Smyth, G. A.: Activation of peptic ulcer during pituitary adrenocorticotrophic hormone therapy. Report of three cases, *J.A.M.A.*, 145:474, 1951.
- Thorn, G. W.: Studies on ACTH and cortisone, *Modern Med.*, 19:103, 1951.
- Traeger, C. H.: Cortisone therapy of rheumatoid arthritis in everyday practice, *Merck Rep.*, 60:10, 1951.
- Ward, L. E. and others: Clinical effects of cortisone administered orally to patients with rheumatoid arthritis, Proc. Staff Meet. Mayo Clin., 26:361, 1951.
- Warren, L.: Cited by Gray, S. J. et al. (15).
- Bloomfield, A. L.: Untoward effects on the stomach of corticotropin and cortisone (Editorial), *A.M.A. Arch. Int. Med.*, 90:281, 1952.
- Bulova, P. N., Becker, F. P. and Maslon, M.: Gastro-duodenal ulcer following cortisone therapy: Report of a case with fatal hemorrhage, *New York State J. Med.*, 52:1181, 1952.
- Busby, C. L. and others: Development of bleeding gastric ulcer in a child with acute rheumatic fever treated with ACTH and cortisone, *New Orleans M. & S. J.*, 104:583, 1952.
- Chase, J. D. and Lightbody, J. J.: The use of massive-dose cortisone in the treatment of rheumatoid arthritis, *J. Michigan M. Soc.*, 51:1167, 1952.
- Davis, T. A. and Zeller, M.: Multiple peptic ulcers with massive hemorrhage during oral cortisone therapy. Report of a case, *J.A.M.A.*, 150:31, 1952.
- Irons, E. N.: Recent studies on ACTH and cortisone, *M. Clin. North America*, 36:229, 1952.
- Kirsner, J. B., Klotz, A. P. and Palmer, W. L.: Unfavorable course of gastric ulcer during administration of ACTH and cortisone, *Gastroenterology*, 20:27, 1952.
- Krantz, J. C., Jr.: In contraindications to ACTH and cortisone, Panel discussion, Maryland State M. J., 1:485, 1952.
- Moe, A. E.: Gastric ulcer appearing during cortisone administration: Report of a case, *Gastroenterology*, 20:343, 1952.
- Newcomer, V. D., Sternberg, T. H. and Linden, I. H.: An evaluation of ACTH and cortisone in dermatologic patients, *Am. Pract.*, 3:912, 1952.
- Ogryzlo, M. A. and Gornall, A. G.: Observations on the oral administration of cortisone, *Canad. M. A. J.*, 66:44, 1952.
- Price, A. E. and others: Observations on the use of cortisone and corticotropin in rheumatoid arthritis, *J. Michigan M. Soc.*, 51:1183, 1952.
- Rowe, A. Jr. and Rowe, A. H.: Cortisone and corticotropin in allergic disease, *California Med.*, 77:387, 1952.
- West, H. and Newns, G.: Some effects of long-con-

tinued cortisone therapy in rheumatoid arthritis. *Lancet*, 2:515, 1952.

48. Young, D. and Rodstein, M.: Results of cortisone-corticotropin therapy in chronic active rheumatic fever. *A.M.A. Arch. Int. Med.*, 90:64, 1952.

49. Bosien, W. and Tyson, M.: Spontaneous perforation of a benign gastric ulcer into the transverse colon. *Gastroenterology*, 24:113, 1953.

50. Griep, A. H. and Bucholz, R. R.: Perforation of chronic duodenal ulcer during cortisone therapy for Addison's disease. *Am. J. Surg.*, 85:703, 1953.

51. Hall, B. D.: Gastric ulcer associated with cortisone therapy. *Gastroenterology*, 25:89, 1953.

52. Higgins, G. A. and Rider, R. D.: Bleeding gastric ulcer requiring partial gastrectomy in a patient receiving cortisone. *Am. Surgeon*, 19:275, 1953; *Internat. Abs. Surg.*, 97:461, 1953.

53. Kerdasha, R.: Perforated gastric ulcer during cortisone therapy for rheumatoid arthritis, report of a case. *J. M. Soc. New Jersey*, 50:343, 1953.

54. Kier, J. H., Gendal, B. R. and Rich, J. R.: Perforated peptic ulcer during cortisone administration. *Am. Pract.*, 4:510, 1953.

55. Kinsell, L. W., Partridge, J. W. and Foreman, N.: The use of ACTH and cortisone in the treatment and in the differential diagnosis of malignant exophthalmos: A preliminary report. *Ann. Int. Med.*, 38:913, 1953.

56. Kirsner, J. B.: Hormones and peptic ulcer. *Bull. New York Acad. Med.*, 29:477, 1953.

57. Perles, L.: Un cas de perforation duodenale sous cortisone. *Rev. Rhum.*, 20:223, 1953.

58. Pollard, H. M.: Therapy not to employ in the treatment of peptic ulcer. *Wisconsin M. J.*, 53:325, 1953.

59. Sandweiss, D. J., Scheinberg, S. R. and Saltzstein, H. C.: The effects of corticotropin and of cortisone on experimental peptic ulcer in dogs: With a discussion on the relation of these hormones to peptic ulcer in man. *Harper Hosp. Bull.*, 11:182, 1953.

60. Sauer, W. G., Dearing, W. H. and Wollaeger, E. E.: Serious untoward gastrointestinal manifestations possibly related to administration of cortisone and corticotropin. *Proc. Staff Meet. Mayo Clin.*, 28:641, 1953.

61. Siguier, F., Welti, J. J., Lumbruso, P. and Lelievre: Les accidents digestifs graves de la thérapeutique hormonale par l'ACTH et la cortisone. *Arch. Mal. Appar. dig.*, 42:129, 1953; *Abs., Excerpta med. (Int. Med.)*, 8:275, 1954.

62. Texter, E. C., Jr. and others: Idiopathic ulcerative colitis. Giant ulceration following corticotropin (ACTH) and cortisone therapy. *A.M.A. Arch. Int. Med.*, 91:744, 1953.

63. Thorn, G. W. and others: Pharmacologic aspects of adrenocortical steroids and ACTH in man. *New England J. Med.*, 248:369, 1953.

64. Wrong, N. M., and Smith, R. C.: Cortisone in the treatment of acute self-limited dermatoses. *Canad. M.A.J.*, 68:50, 1953.

65. Copeman, W. S. C. and others: Management of rheumatoid arthritis with prolonged cortisone administration. *Brit. M. J.*, 1:1109, 1954.

66. Demartini, F. and Ragan, C.: Cited by Sandweiss, D. *Gastroenterology*, 27:604, 1954.

67. Engleman, E. P. and others: Rheumatoid arthritis—An evaluation of long-term treatment with cortisone. *California Med.*, 80:369, 1954.

68. Goldberg, M. B.: Experience with long-term cortisone therapy in congenital adrenocortical hyperplasia. Report of 4 cases. *J. Clin. Endocrinol.*, 14:389, 1954.

69. Gray, S. J.: Hormonal influences in peptic ulcer disease. *Internat. Rec. Med.*, 167:284, 1954.

70. Holbrook, W. P.: Cited by Sandweiss, D.: *Gastroenterology*, 27:604, 1954.

71. Morrison, L. M.: A program of medical treatment for chronic ulcerative colitis. *Abs. of Papers, Third Internat. Congr. Int. Med.*, Stockholm, Sweden, 1954, pp. 128-9.

72. Popper, H.: Clinical pathological conference. Northwestern Univ. Med. School, Case 30. *Quart. Bull. North-*

western Univ. Med. School, 27:81, 1953; cited by Sandweiss, D. J.: *Gastroenterology*, 27:604, 1954.

73. Ulin, A. W. and Cancellmo, J. B.: Stress syndrome and perforated peptic ulcer. *Surgery*, 35:640, 1954.

74. Bunim, J. J., Ziff, M. and McEwen, C.: Evaluation of prolonged cortisone therapy in rheumatoid arthritis. *Am. J. Med.*, 18:27, 1955.

75. Sakka, M.: Les perforations digestives et les peritonites sous cortisone et ACTH. *Presse med.*, 63:552, 1955.

76. Toone, E. C. and Irby, R.: Effect of cortisone in the long-term treatment of rheumatoid arthritis. Observation of thirty-five patients over a three-year period. *Am. J. Med.*, 18:41, 1955.

77. Ensternman, George B. and Balfour, Donald C.: *The Stomach and Duodenum*, Philadelphia, W. B. Saunders Company, 1935.

78. Jennison, J.: Cited by Bockus, H. L. (80).

79. Portis, S. A. and Jaffe, R. H.: Cited by Bockus, H. L. (80).

80. Bockus, H. L.: *Gastroenterology*, vol. 1. *The Stomach and Esophagus*, Philadelphia, W. B. Saunders Co., 1944, p. 319.

81. Ivy, A. C.: The problem of peptic ulcer. *J.A.M.A.*, 132:1053, 1946.

82. Sandweiss, D. J.: The present status of investigations on peptic ulcer. Report of a survey by the National Committee of the American Gastroenterological Association for the Study of Peptic Ulcer. *Gastroenterology*, 9:335, 1947.

83. Feldman, M.: A statistical study of 112 cases of benign gastric ulceration. *Am. J. M. Sc.*, 215:13, 1948.

84. Ivy, A. C., Grossmann, M. I. and Bachrach, W. H.: *Peptic ulcer*, Philadelphia, Blakiston Company, 1950, p. 480.

85. Doll, R. and Avery-Jones, F.: Occupational factors in the etiology of gastric and duodenal ulcers. *London*, 1951; cited by Alsted, G.: *Gastroenterology*, 26:268, 1954.

86. Maggi, A. L. C., Meeroff, M. and Segal, J. E.: Estudio estadístico de la ulcera gastroduodenal. *Sem. med.*, B. Aires, 98:921, 1951. *Excerpta Med. (Int. Med.)*, 6:258, 1952.

87. Waskow, W. L.: Incidence of gastric and duodenal ulcers. *Wisconsin M. J.*, 49:683, 1950.

88. Kirsner, J. B. and Palmer, W. L.: The problem of peptic ulcer. *Am. J. Med.*, 13:615, 1952.

89. Baner, W.: in discussion of Ragan, C. (90).

90. Ragan, C.: Wound healing: Surgical conditions; Ulcer. *Proc. Conf. on effects of cortisone*, Merck & Co., Dec. 10, 1951, p. 54.

91. Bunim, J. J.: Practical considerations regarding the use of ACTH and cortisone. 25th Grad. Fortnight, New York Acad. Med., Oct. 6-17, 1952, p. 32.

92. Turnbull, J. A.: Study of one hundred twenty-seven cases of arthritis (with notes on gastro-intestinal features). *Am. J. Digest. Dis.*, 11:122, 1944.

93. Ludwig, A. O.: Psychiatric studies of patients with rheumatoid arthritis. in *Am. Rheum. Assoc.: Rheumatic Diseases, Proc. 7th Internat. Cong. Rheum. Dis.*, Philadelphia, W. B. Saunders Company, 1952, p. 114.

94. Spachman, E. W., Bach, T. F., Senll, C. W., and Pemberton, R.: Complete roentgen ray studies of the gastrointestinal tract in 400 arthritides. *Am. J. M. Sc.*, 202: 68, 1941.

95. Warter, P. J. and Moroschak, S.: Arthritis as related to gastroenterology. *Rev. Gastroenterol.*, 18:70, 1951.

96. Edwards, C. R. and Jennings, E. R.: Peptic ulcer. A 5-year review. *Ann. Surg.*, 137:329, 1953.

97. Mulsow, F. W.: Peptic ulcer in the aged. *Am. J. Digest. Dis.*, 8:112, 1941.

98. Mulsow, F. W.: Increase in peptic ulcer of aged. *Am. J. Digest. Dis.*, 16:383, 1949.

99. Emery, Edward S. and Monroe, Robert T.: Peptic ulcer. Nature and treatment based on a study of 1,435 cases. *Arch. Int. Med.*, 55:21, 1935.

100. Flood, Charles A.: Recurrence in duodenal ulcer under medical management. *Gastroenterology*, 10:184, 1948.

101. Hurst, Arthur F. and Stewart, Matthew J.: Gastric

and duodenal ulcer, Oxford Univ. Press, London, 1929.

102. Graves, Amos M.: Perforated peptic ulcer in German clinics, an analysis of 4402 cases, *Ann. Surg.*, 98:197, 1933.

103. DeBaakey, Michael: Acute perforated gastroduodenal ulceration. A statistical analysis and review of the literature, *Surgery*, 8:52 and 1028, 1940.

104. Smith, L. A. and Rivers, A. B.: Peptic ulcer. Pain patterns, diagnosis and medical treatment, New York, Appleton-Century-Crofts, Inc., 1953, p. 231.

105. Gott, J. R., Shapiro, D. and Kety, K. C.: Gastric ulcer. A study of 138 patients, *New England J. Med.*, 250:499, 1954.

106. Selye, H.: On the acquisition of tissue resistance to digestion by gastric juice, *Gastroenterology*, 26:221, 1954.

107. Selye, Hans: The Story of the Adaptation Syndrome, Montreal, Acta, Inc., 1952.

108. Gray, S. J. and others: The significance of hormonal factors in the pathogenesis of peptic ulcer, *Gastroenterology*, 25:156, 1953.

109. Boles, Russel, Sr.: Personal communication.

110. McHardy, Gordon and McHardy, Robert: *South. Med. J.*, in press.

111. Halstead, J. A. and others: Clinical effects of ACTH in ulcerative colitis, In Mote, J. R.: *Proceedings of Second Clinical ACTH Conference*, Vol. 2. Therapeutics, p. 489, Philadelphia, The Blakiston Co., 1951.

113. Palerm, W. L.: Discussion of symposium on ACTH and cortisone as related to the gastrointestinal tract, *Gastroenterology*, 19:733, 1951.

114. Tulin, M., Kern, F. and Almy, T. P.: Perforation of bowel during treatment of ulcerative colitis with corticotropin, *J.A.M.A.*, 150:559, 1952.

115. Ruffin, J. M.: Corticotropin and cortisone in the treatment of ulcerative colitis. Editorial, *Gastroenterology*, 26:113, 1954.

116. Reiff, S.: Acute suppurative cholecystitis with rupture of gallbladder and liver abscess formation during administration of cortisone, *Ann. Int. Med.*, 38:1313, 1953.

117. Rutherford, P. S. and Berkeley, J.: Phlegmonous gastritis in a cortisone treated patient, *Canad. M. A. J.*, 69:68, 1953.

118. Beck, J. C., Browne, J. S. L., Johnson, L. G., Kennedy, B. S., and MacKenzie, D. W.: Occurrence of peritonitis during ACTH administration, *Canad. M. A. J.*, 62:423, 1950.

119. Lubin, R. I., Mischbach, W. D., Zemke, E. M., Hammersten, J. F. and Heller, B. I.: Acute perforation of duodenal ulcer during ACTH and cortisone therapy, *Gastroenterology*, 18:308, 1951.

at operation for other conditions, at which time the bizarre positioning of the viscera may be so confusing that the originally planned operation may have to be abandoned.

EMBRYOLOGY

The intestinal tract of the early embryo is a straight structure suspended in the sagittal plane on a common dorsal mesentery (Fig. 1). The process by which this primitive position is converted to that seen at birth is called intestinal rotation.

Embryologists¹ divide the primitive intestinal tract into three parts. The foregut extends from esophagus to duodeno-jejunal junction and receives its blood supply from the coeliac axis. The midgut extends from duodeno-jejunal junction to midtransverse colon and is supplied by the superior mesenteric artery. The hindgut extends from midtransverse colon to anus. It is the part which receives its blood supply from the inferior mesenteric artery.

The midgut portion is the one primarily concerned in intestinal rotation and is the only one under discussion. When it rotates the whole loop rotates about the superior mesenteric artery as an axis.

This process of rotation about the superior mesenteric artery is a contraclockwise one which embryologists divide into three stages. The first stage is a 90° rotation of midgut loop from sagittal to horizontal plane (Fig. 1 after Dott²). The second stage is an additional 180° rotation (Fig 2). In the third stage the cecum descends from its subhepatic position into the right lower quadrant and the mesentery of the ascending colon becomes fixed to the posterior abdominal wall (Fig. 3).

FIRST STAGE OF MID-GUT ROTATION

Embryology:—The primitive intestinal tract is a straight structure suspended on a dorsal mesentery in the sagittal plane. As it elongates, the midgut loop bulges through the umbilical orifice into the primitive umbilical cord as a temporary physiologic umbilical herniation. The first stage of intestinal rotation is a counter-clockwise rotation of 90° of this intra-umbilical loop from the sagittal to the horizontal plane (Fig. 1). It occurs at

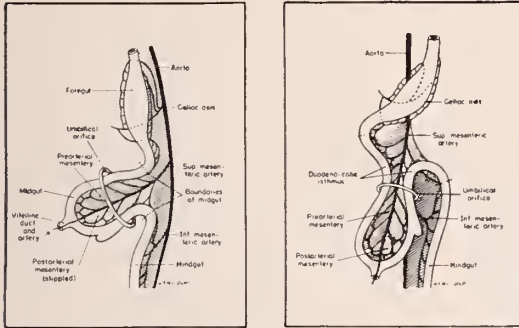
ANOMALIES OF INTESTINAL ROTATION *

CLARENCE E. GARDNER, JR., M. D.
DURHAM, N. C.

Abnormalities of intestinal rotation are of great interest to surgeons, as well as to pediatricians, gastroenterologists and roentgenologists. They may be the cause of a variety of symptoms, the commonest of which is intestinal obstruction in infants or children. Or they may exist without symptom and be incidental findings

* Presented at meeting of the Surgical Association of Louisiana, at New Orleans, November 4, 1956.

FIRST STAGE



Eighth week of intra-uterine life. The mid gut loop is within a temporary umbilical herniation. A 90° counterclockwise rotation from the sagittal (left view above) to the horizontal plane (right view above) occurs.

ANOMALY

Omphalocele: Arrest of rotation with a persistent umbilical hernia covered by jelly-like cord structure.

Figure 1

about the eighth week of intrauterine life.

Omphalocele:—Failure of rotation beyond the first stage and retention of the midgut loop in the umbilical stalk at the time of birth is called omphalocele, amniotic hernia, or exomphalos. In this condition herniation of intestine and sometimes also of liver and spleen into the umbilical cord is present at birth, the hernial covering being the thin translucent umbilical cord structure.

The jelly-like cord structure covering such a herniation is delicate and liable to rupture within the first few hours of life. To prevent evisceration it is necessary for the surgeon to correct the defect promptly. If the herniation is small, it may be a simple matter to replace the bowel and repair the abdominal wall. In the case of larger herniations which may include the liver and spleen, Gross³ has described a procedure wherein the covering of amniotic membrane over the viscera is not removed but is covered with skin mobilized from thorax, flanks and abdomen. No effort is made to close other structures of the abdominal wall until a later stage. This technic eliminates evisceration of bowel at operation and since the viscera are merely covered with skin and not replaced into the peritoneal cavity, there is a minimum rise in intra-abdominal pressure with crowding of viscera against the diaphragm.

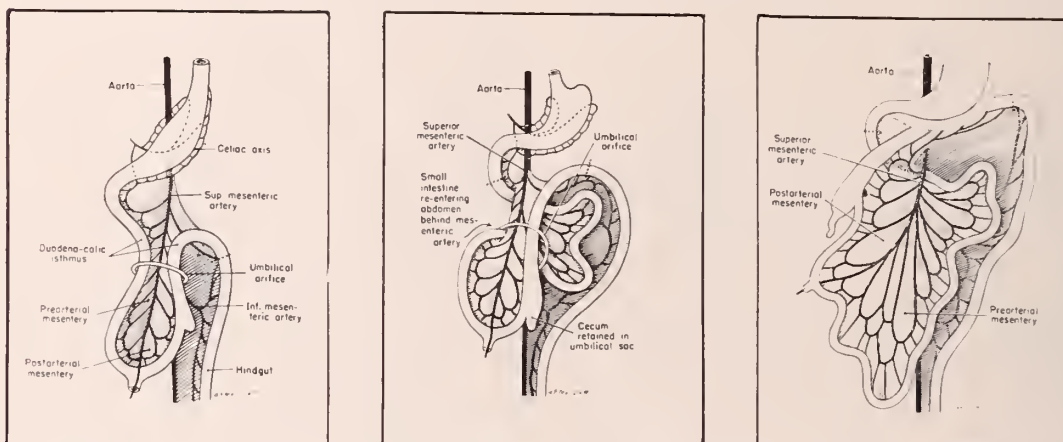
SECOND STAGE OF MID GUT ROTATION

Embryology:—This is the stage when reduction and major rotation of the bowel occurs and is the most important stage of intestinal rotation. The midgut loop returns to the peritoneal cavity from its temporary position in the umbilical herniation and at the same time rotates an additional 180° in a counterclockwise direction about the mesenteric root as a pedicle (Fig. 2). This stage occurs quickly, at about the tenth week of intrauterine life, and in none of the models studied by Mall or by Frazier and Robbins was the gut found in its process of return. Snyder and Chaffin⁴ have recently studied a 37 mm. embryo in which about half of the intestinal tract remained within the cord. In the process of rotation the proximal limb of the prearterial segment is thought to be reduced first, its coils entering the abdomen in an orderly sequence, passing under the superior mesenteric vessels and the mesentery (Fig. 2 center). As these coils collect in the left side of the abdomen they deflect the hindgut and its mesentery to the left so that the splenic flexure and descending colon are carried into their normal position. The cecum and adjacent colon are reduced last, and as the colon straightens out it is deflected to the right, thus completing a 180° rotation in a counterclockwise direction about the superior mesenteric artery as an axis (Fig. 2 right). The duodenum thus comes to lie under the origin of the superior mesenteric artery while the colon passes in front. The final result is a 270° rotation from the sagittal position of the midgut loop at the start of the first stage. In this way the intestinal tract comes to occupy its position as normally seen at birth.

A wide variety of abnormalities may occur as a result of anomalies during the second stage, the commonest being nonrotation, volvulus of the midgut, internal hernia and reversed rotation.

Nonrotation:—In nonrotation the midgut loop is returned to the peritoneal cavity from the temporary umbilical hernia-

SECOND STAGE



Tenth week of intra-uterine life. The proximal limb of the mid gut loop re-enters the coelomic cavity under the mesenteric root first (center view above). An orderly reduction of the remaining mid gut loop occurs. As the cecum and ascending colon are reduced they straighten out (right view above) completing an 180° counterclockwise rotation of the mid gut about the mesenteric root. The duodenum is thus drawn under and the colon above this vascular pedicle.

Non rotation

Volvulus of mid gut

ANOMALIES:

Malrotation

Reversed rotation

Figure 2

tion without having rotated beyond the horizontal plane it occupied at the end of the first stage (Fig. 1 right). The duodenum descends on the right of the superior mesenteric artery. The small intestine is entirely in the right side of the abdomen and the colon is on the left. The cecum is in the left lower quadrant. The terminal ileum crosses the midline to enter the cecum from the right. From this point the ascending colon passes upward on the left of the midline to a point behind the greater curvature of the stomach. Between this point and the splenic flexure is a narrow U-shaped loop of transverse colon. The descending colon and rectum are in normal position.

Nonrotation is recognized at x-ray by noting that the duodenum descends entirely on the right side of the vertebral column and that small bowel loops are entirely on the right. The colon is entirely on the left. This anomaly may exist without symptoms.

Volvulus of the Midgut:—If nonrotation occurs without secondary fixation of the mesentery, the entire midgut loop hangs free from a narrow pedicle at the origin of the superior mesenteric artery (duo-

deno-colic isthmus, Fig. 1 right). This narrow point of suspension for the long midgut loop predisposes to the development of a volvulus of the entire midgut. Such condition is a frequent cause of acute duodenal obstruction in newborn infants. It is also a cause of chronic or recurrent duodenal obstruction in children and young adults. Anomalous adhesive bands crossing the duodenum in patients with nonrotation also occasionally cause chronic duodenal obstruction.

The usual picture of volvulus of the midgut^{5,6} is that of partial or complete duodenal obstruction dating from birth. First feedings are usually taken normally and meconium and in some cases normal stools are passed. Vomiting, constipation, and abdominal pain usually begin on the third or fourth day. The vomitus contains bile. This finding rules out congenital pyloric stenosis as a cause of the vomiting. Vomitus is often projectile. Epigastric distention and visible waves of gastric peristalsis are often present. A plain roentgenogram of the abdomen will show a dilated stomach and duodenum with a small amount of air in the intestine, or not, depending upon whether the ob-

struction is partial or complete. It is unwise to put barium into the stomach. If the roentgenologist is able to demonstrate that the entire duodenum is on the right side of the vertebral column or that the colon is entirely on the left, an anomaly of rotation can be suspected. Usually it is impossible to determine before operation whether the duodenal obstruction is caused by atresia, stenosis, extrinsic bands, or a volvulus of the midgut.

Operative treatment offers the only hope of cure for patients with volvulus of the midgut. In those with symptoms of intestinal obstruction or vascular occlusion, immediate operation is imperative. At operation the volvulus of the entire mesentery may be easily overlooked if adequate exploration is not done. The condition may be suspected if the right half of the colon is not found in its normal position or if on palpation a firm cord representing the twisted root of the mesentery can be felt at the site of origin of the superior mesenteric artery. Complete evisceration of all of the intestine is advised as the quickest method of determining the true nature of the condition present. Detorsion of the volvulus is easily accomplished. All of our patients had adhesions attaching bowel and mesentery of the entering and emerging loops of intestine which had been involved in the volvulus. These adhesions must be divided as in freeing two adherent leaves of a book. Adhesive bands may also extend from the colon across the duodenum to the posterior abdominal wall. They must be divided, as well as the adhesions uniting entering and emerging loops of bowel, in order that the duodenum be completely freed and separated widely from the colon. If these adhesions are not freed recurrence of the volvulus may occur.

Chronic venous obstruction which has accompanied the volvulus may cause enormous distention of the mesenteric veins. Care must be taken not to damage these veins when adherent leaves of mesentery are separated. Lymph nodes in the mesentery are usually much enlarged by the

lymphatic obstruction which accompanied the volvulus. In one of our cases, dilated lymphatics could be seen in the mesentery and there was a little chylous free fluid in the peritoneal cavity.

After being freed the bowel is returned to the abdomen in a state of nonrotation, with the duodenum descending on the right of the vertebral column and the colon ascending on the left. Entering and emerging loops of bowel involved in the volvulus which were previously adherent are separated as widely as possible when the bowel is replaced. No effort to fix the bowel has been attempted in any of our cases and none of our patients have had recurrence of their volvulus. Recurrences have been reported in cases where adhesions between loops of bowel in the volvulus or adhesive bands crossing the duodenum were not freed. Wangenstein⁷ has reported a method of fixation of the bowel in a position of normal rotation. Some effort to fix the nonrotated cecum and ascending colon along the left lumbar gutter would seem to be a simpler method of preventing recurrence of the volvulus, if any fixation is necessary.

Internal Hernia:—Complicated explanations of the origin of paraduodenal, retroperitoneal or internal herniations occur in the literature which describe them as occurring in any one of as many as nine fossae about the duodenojejunal junction and four in the cecal area. Their explanation on the basis of an anomaly of intestinal rotation is much simpler and was first offered by Andrews⁸ in 1923. He explained the origin of the paraduodenal hernia as imprisonment of small intestine under the mesentery of the right colon during the process of fixation of the midgut loop after its rotation.

Haymond and Dragstedt⁹ in careful autopsy dissections of a case with large internal hernia previously observed at operation, showed that the abnormality was one of malrotation during the second stage of intestinal rotation. The essential feature of the abnormality was a rotation of the bowel into the mesentery of its

postarterial segment (later to become the mesentery of the ascending colon) instead of into the free peritoneal cavity, during the phase of intestinal rotation when the midgut loop was reduced back into the peritoneal cavity from the umbilical orifice. In their case and in ours almost the entire small intestine was in the sac. The amount of bowel involved may vary from a short loop to the entire small intestine.

Many of the patients with internal hernia have no symptoms, and the condition is recognized only incidentally at operation, anatomic dissection or autopsy. If symptoms occur they are usually those of partial or intermittent intestinal obstruction.

In our case precise diagnosis of the condition present was made by Reeves¹⁰ who visualized the barium-filled small intestine enclosed in a circular pocket in the center of the abdomen. This pocket was surrounded by colon of the midgut loop. The splenic flexure and descending colon were normally placed.

At operation an adequate exposure, knowledge of embryonic origin, and delivery of as much bowel as is necessary will usually make the situation clear. Since the wall of the sac is the mesentery of the postarterial segment of the midgut loop (terminal ileum and right colon) care must be taken not to damage its blood vessels. The recommended procedure is to withdraw the bowel from the internal hernial sac and to close its mouth with as many sutures as are necessary.

Reversed Rotation:—In this condition a clockwise instead of a counterclockwise rotation of 180° occurs during the second stage. The transverse colon thus comes to lie under the superior mesenteric artery and the duodenum above it. If normal fixation of the root of the mesentery toward the right iliac fossa takes place with the bowel in this position, the transverse colon becomes trapped in a tunnel beneath this acquired attachment. Fixation of the cecum and ascending colon is usually incomplete and torsion of the mobile right half of the colon with obstruction

of the transverse colon at the site of the tunnel through the root of the mesentery may occur.

True reversed rotation is not common. McIntosh and Donovan¹¹ collected 16 cases and added one of their own. We have never had such a case.

THIRD STAGE OF MID-GUT ROTATION

Embryology:—This stage is characterized by descent of the cecum from its subhepatic position to the right lower quadrant and fixation of the mesentery of cecum and descending colon in the right flank (Fig. 3). Fixation of the descending colon and of the lower portion

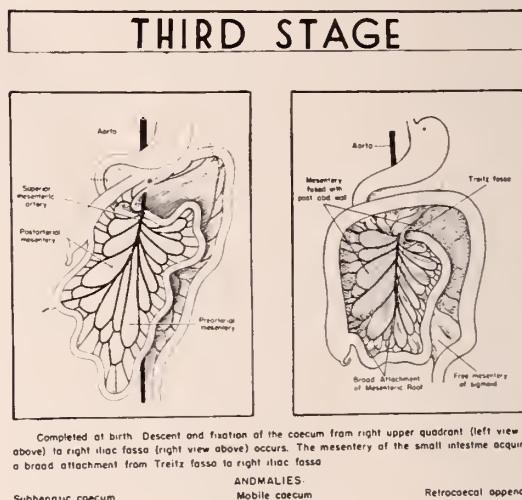


Figure 3

of the duodenum also occurs in this stage which is completed about the time of birth.

The important feature of this stage is the fixation of the ascending colon and cecum with its mesentery in the right iliac fossa and with it the fixation of the root of the small bowel mesentery on a wide base from left upper to right lower quadrants. The midgut loop originally dependent from a narrow pedicle at the origin of superior mesenteric artery now acquires a broad oblique attachment to the posterior abdominal wall. It is the absence of this attachment which predisposes to volvulus of the entire mesentery.

Anomalies of the third stage include subhepatic cecum, retrocaecal appendix and mobile caecum.

Subhepatic Cecum:—If the cecum fails

to elongate and descend into the right iliac fossa it remains in a subhepatic position. If with the cecum in this position there is also failure of fixation of the small bowel mesentery on a broad attachment of the posterior abdominal wall, volvulus of all of the small intestine may occur. The only other significance of this anomaly is that appendicitis, if it occurs in such a position, may be unrecognized if the possibility of a high lying cecum is not kept in mind.

Retrocecal Appendix:—If the appendix is drawn under the cecum as the cecum descends into the right lower quadrant it may become fixed in a retrocecal position during the normal process of fixation of the cecum and ascending colon to the peritoneum of the right flank. This is a rather common anomaly and is well recognized by surgeons, although they usually fail to consider it an anomaly of rotation.

Mobile Cecum:—Failure of fusion of the cecum and ascending colon and its mesentery to the peritoneum of the right iliac fossa in a normal manner allows undue mobility of the cecum and ascending colon. This was formerly in itself thought to be the cause of symptoms, and numerous operations were devised for its correction. At present a mobile cecum is thought to be of significance only because it may be the seat of volvulus of the cecum or because it may allow the appendix to occupy a position almost any place in the abdomen so that appendicitis in an anomalously located appendix may go unrecognized.

Volvulus of the Cecum:—Volvulus of the cecum occurs only in a mobile cecum. The twist is usually a longitudinal one about the long axis of the ascending colon, although there may also be a rotation in the oblique axis so that the cecum comes to lie in the epigastrium or left upper quadrant. The signs and symptoms are those of acute intestinal obstruction, often with enormous dilatation of the cecum. Roentgenograms show evidence of dilated small bowel plus a large cecal gas shadow. Barium introduced by enema will show an obstruction in the region of the hepatic

flexure. At operation detorsion is done. Cecopexy or cecostomy may be necessary. If the bowel is gangrenous it must be resected.

SUMMARY

Intestinal rotation is the process which converts the position of the intestinal tract of the early embryo from a straight structure suspended on a common dorsal mesentery in the sagittal plane to the position seen in the normal child at birth.

A precise knowledge of the stages of this process of rotation and fixation and of the abnormalities which may occur in each is essential to the surgeon lest he be confused when confronted by one of the anomalies.

Each of the more common anomalies which occur in the three stages of rotation is described. They include omphalocele, nonrotation, volvulus of the midgut or of the entire small intestine, various types of malrotation, internal hernia, reversed rotation, subhepatic cecum, mobile cecum, volvulus of the cecum and the retrocecal appendix.

Some of the anomalies may exist without symptom and be detected only incidentally on roentgen ray examination, at operation, or when a diseased organ, particularly the appendix, is found in an anomalous position. If symptoms occur from the abnormality of rotation and fixation the usual ones are those of partial or complete intestinal obstruction.

Volvulus of the entire midgut or of the entire small intestine is the most common cause of intestinal obstruction secondary to anomalies of intestinal rotation. Volvulus of the cecum may occur if cecum and ascending colon fail to become fixed to the posterior abdominal wall during the third stage of rotation.

Innumerable other irregularities of intestinal rotation may also occur especially during the second stage. They include a wide variety of anomalous kinks, adhesive bands and irregular fixations which are not difficult to unravel if the normal process of rotation is understood.

REFERENCES

1. a. Frazer, J. E., and Robbins, R. H.: On the factors

concerned in Causing Rotation of the Intestine in Man, *J. Anat. & Physiol.*, 50:75, 1915.

1. b. Mall, F. P.: Development of the Human Intestine and Its Position in the Adult. *Bull. Johns Hopkins Hosp.*, 9:197, 1898.

2. Dott, N. M.: Anomalies of Intestinal Rotation: Their Embryological and Surgical Aspects, with Report of Five Cases. *Brit. J. Surg.*, 11:251, 1923.

3. Gross, R. E.: A New Method for Surgical Treatment of Large Omphaloceles. *Surgery*, 24:277, 1948.

4. Snyder, W. H. Jr., and Chaffin, Lawrence: An Intermediate Stage in the Return of the Intestines from the Umbilical Cord. *Anat. Record*, 113: 451, 1952.

5. Gardner, C. E., Jr., and Hart, D.: Anomalies of Intestinal Rotation as a Cause of Intestinal Obstruction. *Arch. Surg.*, 29:942, 1934.

6. Gardner, C. E., Jr.: The Surgical Significance of Anomalies of Intestinal Rotation. *Ann. Surg.*, 131:879, 1950.

7. Wangenstein, O. H.: New Operative Techniques in the Management of Bowel Obstruction. *Surg., Gynec. & Obst.*, 75:675, 1942.

8. Andrews, E.: Duodenal Hernia—A Misnomer. *Surg., Gynec. & Obst.*, 37:740, 1923.

9. Haymond, H. E., and Dragstedt, L. R.: Anomalies of Intestinal Rotation. *Surg., Gynec. & Obst.*, 53:316, 1931.

10. Reeves, R. J., Moran, F. T., and Jones, P. A.: Right Paraduodenal Hernia with Roentgen Diagnosis and Recovery. *Am. J. Roentgenol.*, 59:338, 1948.

11. McIntosh, R., and Donovan, E. J.: Disturbances of Rotation of the Intestinal Tract. *Am. J. Dis. Child.*, 57: 116, 1939.

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PRINCIPLES OF OFFICE UROLOGY *

T. LATIOLAIS, JR., M.D.

LAFAYETTE

The need for this paper is obvious in that urology comprises 10 per cent of the average general practitioner's office work, and 100 per cent of the patients he sees have to have a normally functioning urinary system as this is one of the vital organs of the body. A knowledge of anatomy, physiology and pathology is essential in diagnosis and treatment of urinary tract disease.

The genito-urinary tract may be divided into three portions:

1. External genitalia—or that visible and palpable, including the penis and scrotum and its contents—testes, epididymis, vas and cord structures.

2. Lower urinary tract or that palpable and visible by endoscopic means—urethra, prostate, seminal vesicles, and bladder.

3. Upper urinary tract or that visible by radiography—ureters, kidneys, adrenals and blood supply of kidneys.

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PHYSIOLOGY

Physiology of the kidney is manifold; but its most important function is to control water balance, electrolyte balance, and excrete nitrogenous products. The kidney is one of the vital organs and requires one-fifth of the cardiac output to execute its functions. The formation of urine is initiated by a system of pressures including the blood pressure and osmotic pressure thereby bringing from the glomerulus a protein-free filtrate which contains all of the plasma elements and the tubular system selects what it needs and concentrates the undesirables to go through the distal tubules into the kidney pelvis. From here down it is a matter of mechanical drainage.

Physiology of the testes is mainly hormonal and reproductive in that sperm are matured in the scrotum and carried via the ducts to be stored in the seminal vesicles and utilize a common outlet with the urine via the urethra and are maintained by muscular action of the sphincters. It is possible to lose the reproductive function by atrophy and still maintain hormonal balance.

ABNORMAL FINDINGS

By far the most common form of urinary tract pathology that we deal with is infection. This may involve any or all of the various anatomical divisions mentioned. The same may be said for obstruction which is next most common. Both may involve the urinary tract or the genital tract as there is no valve to prevent back flow from one to the other. Thus the contents of the posterior urethra may flow into the bladder or via the ejaculatory ducts and vas into the epididymis. Urine has been recovered in the epididymis by this same mechanism and sperm is frequently seen in the urine. Vascular disease of the kidney presents abnormal findings in the urine which may be blood, albumin, and casts. Malignant disease in the urinary tract is always fatal if allowed to be untreated, and occurs with frequency in any of the three anatomical divisions. Trauma in this mechanized age is becoming more frequently seen. The kidney,

bladder, and urethra are most commonly involved; however, the genitalia are subject to direct trauma.

DIAGNOSIS AND TREATMENT

Urology is very nearly an exact science and, with possibly the exception of the eye, the most exact science in medicine. The diagnosis is made without the aid of surgical exploration in better than 90 per cent of all cases. A good history and a careful examination stressing observation, palpation, and proper collection of a urine specimen are preliminary to any instrumental procedure. I would like to emphasize observation of the urethral meatus for the presence of a discharge which naturally disappears after voiding. A urine specimen that has been properly collected will often avoid unnecessary concern over a few pus cells in the microscopic sediment. The old two glass test is still the proper way of collecting urine and very often differentiates disease occurring in the lower urinary tract from that in the upper. In the female a catheterized urine specimen is a must before starting treatment for a urinary infection. Voided urine specimen is acceptable only if the sediment is negative for pus, blood or bacteria.

In examination of the first anatomical division the organs are before your eyes and readily palpable. Obstruction at the distal end of the urinary tract, the prepuce or meatus will eventually lead to hydro-nephrosis and uremia if not relieved early in life. Therefore an early circumcision and meatotomy may prevent serious kidney disease later in life.

Examination of the scrotal contents is readily accomplished with the aid of an ordinary throat light. The diagnosis of testicular tumor is made by one who thinks of every scrotal mass as being a tumor until proven otherwise. A change in consistency or size of a testicle that does not transilluminate should arouse suspicion of a tumor. This abnormal finding can be compared to its mate, if normal.

Undescended testicle should be repaired surgically before the age of ten years if

a normally functioning testicle is desired. Those repaired after this age should be brought down into the scrotum in order to preserve hormonal function, provided a high-riding testicle will not result; otherwise the testicle should be removed and hernia repaired. Hormonal treatment may be employed if the patient is under nine years of age, however, this has been unsuccessful in the majority of cases.

The distal sac, in repairing a congenital hernia, should be resected from the cord to the testicle and carefully excised as near to the testicle as possible, otherwise a hydrocele will have to be excised at a later date. Another urological complication of a good hernioplasty is testicular atrophy from too tight a closure of the internal or external inguinal ring. Closure of the internal ring should be above the cord to prevent a high-riding testicle that produces testalgia. All scrotal bleeding, even the slightest ooze should be clamped and tied and a drain through a stab wound at the most dependent portion of the scrotum will often avoid a scrotal hematoma and postoperative swelling.

In trauma to the testicle, treatment is usually conservative and consists of bed rest, elevation and ice packs. However, if the scrotum looks like an egg plant in all probability surgical exploration and ligation of the bleeding points is indicated. If the testicle is ruptured, probably orchiectomy is necessary.

Sudden onset of testicular pain, swelling and vomiting in a young boy reaching puberty should bring to mind the possibility of torsion of the cord or of the appendix of the testicle and immediate surgical exploration may save a testicle.

Prostatitis with or without urethritis is usually best treated with chemotherapy, massages and sounds. Once the patient becomes asymptomatic or comfortable, treatment should be reduced to monthly or quarterly office visits with more emphasis on the microscopic sediment of the second glass urine. Urethritis in the female is also usually of chronic nature and treatment should be markedly reduced af-

ter clinical improvement has taken place.

Epididymitis is a very common complication of prostatitis, prostatic surgery, and injuries and deserves a few comments. All are familiar with the diagnosis and treatment in this condition, therefore I would like to comment on the latter associated with injuries. By increasing pressure from straining or lifting, it is possible to push the contents of the posterior urethra, whether it be infected prostatic secretion or urine, into the epididymis, thus giving rise to a full blown epididymitis. This is especially true when the patient's bladder is full of urine as the intravesicle pressure overcomes the internal sphincter and urine can flow toward the epididymis. A chemical epididymitis is the result and a condition similar to urinary extravasation is present. The straining, if related to lifting or fall, is the exciting factor and thus compensation is allowable in most instances. Prevention is usually simple, by a bilateral vasectomy, mechanically blocking the epididymis. Unfortunately this is a sterilization procedure and should not be done without the knowledge and consent of the patient.

After examination of the abdomen, external genitalia and urinalysis, the next procedure is to examine what parts we can feel or instrument. A well lubricated finger can cut down the discomfort of a rectal examination and allow the examiner to feel about the rectum, prostate and seminal vesicles.

In all patients with obstructive symptoms, hesitancy, poor stream and dribbling, regardless of severity, instrumentation for calibration of the urethra is indicated. However, it may not be wise to do this in all cases on the first visit or in obvious prostatic obstructions or in acute illnesses. In obviously enlarged prostates, benign or malignant, not in acute retention, a P.S.P. kidney function test will best afford information as to instrumentation. In reversal P.S.P. where a smaller percentage of dye is eliminated in the first hour, certainly a large amount of residual urine can be expected and

catheter drainage is a must. Whereas if the P.S.P. is normal, no infection present and the patient is not too uncomfortable, instrumentation may hasten an operative procedure and should be delayed until he is ready for surgery.

The passage of sounds and catheters has been a standard office procedure for years and should be accomplished properly by any doctor of medicine. These instruments should be sterilized daily by your nurse and kept sterile for immediate use during office hours. Any of the popular disinfectant agents are cheap and sterilization by mere soaking for twenty minutes is adequate. An assortment of sounds, catheters and guides to meet any type of urethral or prostatic obstruction would not cost over \$50 and would reap benefits many times this amount. Urological patients in distress, after relief are the most gratifying patients I know of.

A few "Don'ts" may be of some help in the management of the acute retention urine. If the bladder is overdistended, more than 500 cc. urine, leave an indwelling catheter in place because the patient will not urinate once the bladder becomes overdistended. If there is obvious prostatic enlargement further study is necessary to determine if the patient is ready for surgery and preliminary drainage to re-establish fluid and electrolyte balance and bladder tone is necessary. With a catheter in place and draining well, the emergency is over for the time being. Do not use a small catheter—never less than a 14 or 16 French. Never use a catheter guide until you know the course of the channel, after having used as large a sound as the meatus will admit, never using smaller than a 20 French. Remember the tip of a size 18 French is very pointed and will penetrate the urethra with ease. The same holds true for the catheter guide—so be careful. If the urethra is ruptured a suprapubic cystostomy is the safest procedure to do. Spontaneous rupture of the bladder is a rare bird, and if you cannot get a catheter in you still

have time to get him to a urologist if you so desire.

Pyuria is the most common abnormal finding that we come across. True pyuria, that is pus in the second glass specimen in the male in the absence of lower tract disease, warrants a complete urological survey. Pyuria in the female, that is on a catheterized urinalysis, that does not clear completely on one course of medication or recurs within a short time, in the absence of lower tract disease, requires a complete urological survey.

By a complete urological survey, I mean at least a plain scout film of the kidneys, ureter and bladder followed by an IV pyelogram, taking as many films as required to visualize the entire urinary

tract. A delayed film of one or two hours sometimes shows function that does not visualize in the five, fifteen or thirty minute routine film. If the bladder does not fill completely a cystogram is indicated.

SUMMARY

In summary, I have tried to discuss the important things that you, as general practitioners, encounter in your daily work. I feel that if you spend a little time reading anatomy, physiology and pathology in regard to the outline that I have given you, the mission of this paper will have been accomplished. I sincerely hope that I have stimulated your interest in investigating common urological diseases.

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AGAMMAGLOBULINEMIA AND HYPOGAMMAGLOBULINEMIA

Agammaglobulinemia and hypogammaglobulinemia is a syndrome concerned with the resistance to bacterial infection described by Bruton¹ in 1952. The syndrome consists of a history of repeated bacterial infections, absence of naturally occurring antibodies and acquired antibodies against bacteria, low or undetectable levels of globulin, and protection against bacterial infection by maintenance injections of gamma globulin. Additional features are that the total serum pro-

teins are within normal range and there is a failure of long term antibiotic therapy to furnish protection.

The concept that the protection against infection and the production of immune antibodies are connected with gamma globulin has been recognized in recent years. The situation in which it is abnormally low or absent is a further clarification of the repeated occurrence of bacterial infection in some patients.

Barrett and Volwiler,² in scientific exhibits in the A.M.A., November 27 to 30, 1956, offered a classification with four categories:

1. Congenital agammaglobulinemia, afflicting male children unable to synthesize gamma globulin.

2. Acquired hypogammaglobulinemia, affecting males or females who have lost the ability to synthesize gamma globulin for unknown reasons, and then develop bacterial infection suddenly after years of normal life.

3. Secondary hypogammaglobulinemia, a complication of diffuse reticulo-endothelial disease occurring in males or females. Included in this category are patients with lymphoma, leukemia, or multiple myeloma, in which the tumor cells replace normal plasma cells or prevent their synthesis of antibodies.

4. Physiological or transient hypogammaglobulinemia of the newborn. Infants are dependent upon the maternal gamma globulin at birth, but by the age of two to three months this is depleted. The infant who is slow in starting synthesis of his own gamma globulin shows a period of deficiency, but later may attain normal levels by the age of twelve months. During the period of depletion, the infant may be comparatively defenseless against ubiquitous respiratory infections. This latter factor is responsible for some sudden deaths in infants.

Clinical manifestations of this syndrome include severe, repeated acute bacterial infections, such as pneumonia, otitis media, meningitis, and chronic bacterial in-

fections, such as bronchiectasis and chronic otitis media.

Certain routine tests may raise the suspicion of gamma globulin deficiency. Serum total globulins may be low, at 0.5 to 1.5 grams per cent. Zinc sulphate turbidity may be low, at 0 or 1 unit. Isohemagglutinins, anti-A or anti-B may be low or absent. Antibody response to typhoid or diphtheria immunization may be weak or absent.

Diagnosis may be established by serum electrophoresis, while precise determinations are dependent upon immunochemical quantitation, a method available in research centers.

The authors find that the normal range is 600 to 1400 mgms. per cent. The agammaglobulinemia range is 0 to 30 mgms. per cent, and the hypogammaglobulinemia range is 25 to 150 mgms. per cent.

The treatment of the condition is the treatment of the acute infection, on the one hand, and the attempt at prevention of recurrent infection, on the other. In the treatment of acute infections the response to antibiotics is usually good, but it is stated that the injection of gamma globulin at the time is not helpful. The prevention offers a problem, which at the present time does not have a satisfactory

solution. The approach is regular injections of gamma globulin to replace the gamma globulin as it is catabolized. The dose is 0.6 to 1.0 ml. of pooled human gamma globulin per kilogram of body weight. Injections are given every three to four weeks, but it is recommended that gamma globulin in the serum be determined prior to each injection. The protection afforded is partial, and it is suggested that the injections may have to be continued indefinitely. They are painful and expensive. Some authors have described local inflammation and a diuretic effect, and also, an inhibitory effect on the bone marrow. However, it is stated that serum hepatitis has not developed.

Recognition of this syndrome will be possible for the alert observer who has adequate clinical laboratory assistance. It will offer the clinician an additional approach in prevention. It will still leave the clinician with only a partial answer to the patient's repeated question of "Why do I develop infections so frequently?" In the attempt through generations to clarify the age old problem of defense and immunity, it seemingly becomes more complicated.

1. Bruton, O. C.: Agammaglobulinemia, *Pediatrics* 9: 722, 1952.

2. Barrett, Beach, and Volwiler, Wade: A.M.A. Exhibit, Seattle, Washington, November 27-30, 1956.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

INTERESTING FACTS FURNISHED BY THE A.M.A. WASHINGTON OFFICE—Continued Part II

(July 1, 1956, to June 30, 1957)

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

National Institutes of Health.....	\$216,508,000
(Last year: \$ 97,823,000)	
National Cancer Institute.....	\$48,432,000
(Last year: \$24,828,000)	

About two-thirds of this appropriation is earmarked for grants to non-Federal individual investigators and private institutions for research and training and states receive \$2,250,000 for cancer control work. The balance is used for direct operations, salaries, supplies, and for this Institute's share in the cost of operating the Bethesda (Md.) Clinical Center and related auxiliary services.

Organization Section

National Heart Institute \$33,396,000
(Last year: \$18,778,000)

Grants to non-Federal individual investigators and public and private institutions for research and training take about two-thirds of the appropriation and \$2,125,000 is allocated to states for heart disease control. The remainder is for direct operations, such as salaries and supplies, and to support the Clinical Center.

Mental Health Institute \$35,197,000
(Last year: \$18,001,000)

Approximately 60% of this appropriation is apportioned for research and training through grants to individual investigators and public and private institutions. The sum of \$4,000,000 is allocated to the states for community mental health services. The remainder will support direct operations, such as salaries, expenses and to help finance the Clinical Center and for related auxiliary research services.

Arthritis & Metabolic Diseases Institute \$15,885,000
(Last year: \$10,740,000)

Grants to public and private investigators for research and training total \$10,290,000. The remainder will go for direct operations, such as salaries and supplies and Clinical Center support.

Neurological Diseases & Blindness Institute \$18,650,000
(Last year: \$ 9,861,000)

Grants to public and private investigators and institutions for research and training total \$14,280,000. The remainder is for direct operations, such as salaries and supplies and to support the Clinical Center.

Allergy & Infectious Diseases Institute \$13,299,000
(Last year: \$ 7,580,000)

Research grants to public and private investigators for research and training amount to \$8,182,000. The remainder finances direct research and other related services of the Institute.

Dental Health Institute \$6,026,000
(Last year: \$2,136,000)

This appropriation is divided as follows: (a) for research and fellowships, \$3,700,000; (b) direct research at Bethesda, \$1,035,000; (c) review and approval of research grants and fellowships, \$79,000; (d) administration, \$100,000; (e) technical assistance to states, \$824,500; and (f) coordination and development of dental resources, \$287,500.

National Institutes of Health—General Funds \$12,122,000
(Last year: \$ 5,899,000)

These funds are administered by the Division of Research Grants of the National Institutes of Health, with practically all funds being expended for research and training grants, with the exception of \$1.7 million for control of biologics (including polio vaccine), which activity is under the Division of Biologics Standards. The balance goes toward supporting fellowship and administrative expenses relating to grants.

NIH Planning and Construction (new category) \$33,501,000

There is available for NIH for planning or construction of facilities \$33,501,000 broken down as follows: \$1,630,000, expansion of surgical NIH units; \$200,000, planning for future construction for dental NIH research; \$1,371,000, for animal quarters, NIH; \$300,000, planning for office building, NIH; \$30,000,000 grants for medical research facilities under Public Law 835.

Indian Health Activities \$48,075,300
(Last year: \$38,840,000)

Under Public Law 568 (83rd Congress) PHS assumed responsibility for health of American Indians and natives of Alaska which formerly was a function of Interior Department. The total is broken down as follows: hospital care in Indian hospitals, \$23,001,400; contract patient care, \$8,313,000; field health services, \$5,940,600; program direction and management services, \$2,058,300; and construction of hospitals, clinics and quarters, \$8,762,000. The total appropriated for Indian health activities is \$48,075,300, to which is added reimbursable items from other government agencies totaling \$538,300.

Hospitals and Medical Care\$40,969,700
(Last year: \$34,326,000)

These funds are used for operational cost and maintenance of PHS hospitals and health services in caring for American seamen, Coast Guard and Public Health Service personnel and their dependents, Federal employees injured at work, leprosy patients and narcotic addicts; includes studies in the development and coordination of nursing resources. It also includes \$1,000,000 for grants to Hawaii for care of patients suffering from leprosy and \$2,000,000 for nurse training grants. Not shown is approximately \$800,000 additional income from reimbursable items from other Federal agencies.

Poliomyelitis Vaccine Program\$23,600,000
(Last year: \$30,000,000)

Public Law 411 extended last year's \$30,000,000 polio vaccine program. Additional appropriated funds amounting to \$23,600,000 are available in addition to unexpended appropriations of last year to states for vaccination of children under 20 and pregnant women against poliomyelitis. The Federal vaccination program is scheduled to expire on June 30, 1957.

Assistance to States—General\$17,591,000
(Last year: \$18,160,000)

Grants totaling \$12,000,000 will be available for apportionment to the states in support of state and local general public health activities. These grants must be matched one state dollar for every two Federal dollars. Last year \$4,500,000 was available for activities in administering the polio vaccination programs in the states. An additional \$4,591,000 supports direct activities of the U. S. Public Health Service in providing technical assistance, consulting services to states, expenses of the National Office of Vital Statistics, international health activities, demonstrations, training activities, and operational expenses. An additional \$1,000,000 will be available for grants to schools or direct traineeship awards to individuals for the training of professional public health personnel. In this program matching will be required.

Tuberculosis Control\$6,660,000
(Last year: \$6,000,000)

Grants to states for diagnostic and treatment clinics, mass case-finding, and follow-up services account for \$4,500,000, all of which has to be matched equally by the states. The remainder is for direct operations of PHS.

Communicable Disease Control\$5,750,000
(Last year: \$5,250,000)

The entire appropriation is used for direct activity of the PHS Communicable Disease Center at Atlanta, Ga., and its affiliated operations, including investigations in poliomyelitis. The Center carries on studies in epidemiology, furnishes laboratory diagnostic services and sponsors special projects to assist states.

Sanitary Engineering Activities\$9,000,000
(Last year: \$4,690,000)

This program is made up of seven activities as follows: air pollution, \$2,740,000; water supply and water pollution control, \$4,224,100; radiological health activities, \$347,800; milk and food sanitation activities, \$446,000; interstate carrier and general sanitation activities, \$493,000; Sanitary Engineering Center research activities \$403,100; accident prevention, \$51,000; and administration, \$295,000.

Venereal Disease Control\$4,195,000
(Last year: \$3,500,000)

Of the total, \$1,700,000 goes for direct grants to states for venereal disease detection, treatment and control on a special-need basis. The remainder is spent for technical assistance to the states, mostly to pay Federal employees assigned to state health departments.

Foreign Quarantine Service\$3,315,000
(Last year: \$3,000,000)

This service operates approximately 250 medical quarantine stations on borders of the United States. It also operates approximately 25 medical examination stations on foreign soil for the examination of aliens seeking visas to enter the U. S. Inspections are made of all seagoing vessels and aircraft entering the U. S.

Office of the Surgeon General \$3,892,000
(Last year: \$2,762,000)

For administrative expenses of this office, including all housekeeping services, evaluation of public health needs, and personnel training. Included also is \$700,000 for administration of the National Health Survey Act authorized by Public Law 652.

Water Pollution Control (new category) \$50,000,000

Under a new law passed by Congress in 1956 (P.L. 660), the Federal government will make grants for waste treatment plants.

National Library of Medicine (new category) \$1,376,000

As a result of Public Law 941 enacted by Congress in 1956, the Army Medical Library has been renamed the National Library of Medicine and transferred to the Department of Health, Education, and Welfare. While it is contemplated that a new structure will be erected to house the library, only operational funds and planning money have been made available by Congress for this fiscal year. Operational funds for the nine months which remained in the fiscal year following the transfer of the library to HEW total \$1,026,000. An appropriation of \$350,000 was made for planning the construction of a new library building.

Alaska—Disease & Sanitation Investigations & Control \$1,185,000
(Last year: \$1,250,000)

This appropriation will be divided as follows: \$638,000 for grants to the Territory for public health services and the remainder for research activities of the Arctic Health Research Center at Anchorage.

Alaska Mental Health Program (new category) \$25,000

Authorized by Public Law 830, which calls for the construction of a mental health hospital in Alaska and Federal funds for operation of a mental health program. The first appropriation is for initial planning.

Reimbursable Health Program for Other Governmental Agencies \$321,800
(Last year: \$321,800)

This represents the cost of services expected to be advanced by Public Health Service to other governmental agencies for establishing and operating on-the-job clinics. As a total, however, it is misleading, as a substantial number of government agencies carry on their own health programs independent of PHS. PHS deals largely with Washington personnel, whereas 90% of the government's employees are located outside of Washington.

Social Security Administration \$161,183,000
(Last year: \$125,796,600)

Bureau of Public Assistance (medical payments) Approx. \$100,000,000
(Last year: \$ 90,000,000)

An estimated \$265,000,000 of Federal, state and local funds is expected to be paid for medical and health needs of public assistance recipients this fiscal year. The U.S. share of this total is an estimated \$100,000,000. This bureau operates under the Social Security Administration.

Disability Freeze Program (new category) Approx. \$9,000,000

Among the administrative expenses of the Old Age and Survivors Insurance program, is an item incurred by excusing disabled persons from paying OASI contributions without penalty in their retirement payments. This phase of the program is referred to as the "disability freeze" amendment to the Social Security Act. This year approximately \$9,000,000 will be expended for employees' salaries, working materials, etc.

Permanent and Total Disability Payments (new category) Approx. \$11,000,000

Under the 1956 amendments to the Social Security Act, persons over age 50 who become permanently and totally disabled may receive payments equal to retirement benefits as though they had reached age 65. This new program will take effect on July 1, 1957. This fiscal year, however, expenses will be incurred for "tooling up". These expenses will include recruiting of additional staff for field offices, training of staff, revising manual materials, negotiation of new agreements with state agencies for rehabilitation and the furnishing of new materials for states to use, such as forms, etc.

Children's Bureau \$41,183,000
(Last year: \$35,796,600)

Operating under the Social Security Administration, the Children's Bureau administers grants to states for maternal and child health, and crippled children's and child welfare services. This year grant money totals \$39,361,000, divided as follows: \$16,000,000 for maternal and child health work, with the states required to spend approximately 50 cents for each Federal dollar; \$15,000,000 for crippled children's services, same matching requirement; and \$8,361,000 for child welfare services, where the only matching requirement is that states must supply some money. In addition the Children's Bureau has \$1,822,000 to finance investigating and reporting activities and to administer the grants.

Food and Drug Administration \$7,979,000
(Last year: \$6,266,000)

For administering the Federal Food, Drug and Cosmetic Act, Congress voted \$6,779,000, which includes \$309,000 for policing the distribution of Salk polio vaccine during this fiscal year. FDA will also realize an estimated \$1,200,000 from fees paid by industry for certification of biologics, insulin, seafood, etc. The figure for last year does not include fees.

Office of Vocational Rehabilitation \$42,110,000
(Last year: \$36,825,000)

Under the expanded Vocational Rehabilitation Act (Public Law 565, 83rd Congress) Congress this year voted \$36,000,000 for grants to states. This is divided as follows: (a) support of basic rehabilitation services including medical examinations, surgical and therapeutic treatment, hospitalization, prostheses, occupational tools and aids, vending stands, rehabilitation facilities, vocational training and funds for maintenance (based on per capita income and populations as in Hill-Burton), \$33,500,000; (b) extension and improvement of state programs, \$1,500,000; (c) special grants to states or nonprofit organizations for projects designed to expand the rehabilitation program (2-1 Federal-state matching), \$1,000,000. In addition \$2,950,000 is available for training of rehabilitation personnel, including physicians, therapists, psychologists, counselors, medical and psychiatric social workers; \$2,000,000 for grants to states and other public and nonprofit agencies and organizations to pay part of the cost of special research and demonstration projects in vocational rehabilitation; and \$1,160,000 for Federal administrative costs.

U. S. Office of Education Approx. \$2,545,000
(Last year: not reported)

Practical Nurse Training: For a goodly number of years the Office of Education has been making grants to states for vocational education in all fields of endeavor. It is estimated that during the last fiscal year approximately \$500,000 in grants was used to educate practical nurses. For this year, the Office of Education has available \$31,267,000 for grants to states. Included in this figure is \$2,000,000 earmarked funds recently authorized by Congress (practical nurses). An appropriation was voted in this amount, plus an additional \$45,000 for added costs of administration. Office of Education officials believe that the states will not diminish the level of last year's program, which would mean approximately \$2,545,000 is available for practical nurse education.

FEDERAL CIVIL DEFENSE ADMINISTRATION (This Year: \$49,810,000 — Last Year: \$30,450,000)

Projected health and medical spending by FCDA this year moves close to the \$50,000,000 mark for the first time. Out of a total appropriation of \$93,560,000, the estimated \$49,810,000 spending for the FCDA health office includes \$47,000,000 for stockpiling medical and other supplies owned wholly by the Federal government, \$1,700,000 for matching funds to the states to help them in their medical stockpiling, \$810,000 for research and \$300,000 for administration costs.

ATOMIC ENERGY COMMISSION (This Year: \$31,525,000 — Last year: \$27,700,000)

The Atomic Energy Commission's Division of Biology and Medicine has about \$2.7 million more than last year for research projects. This year's total includes the following spending plans: cancer, \$3,002,000; other medical, \$9,729,000; biological, \$10,821,000; biophysical, \$3,459,000; development of new laboratory equipment, \$2,319,000; vocational and special training, \$615,000; radioisotope distribution, \$510,000; and miscellaneous items, \$1,070,000.

INTERNATIONAL COOPERATION ADMINISTRATION

(This Year: \$29,310,000 — Last Year: \$25,441,000)

Technical Cooperation Programs.....\$16,380,000
(Last year: \$20,141,000)

The International Cooperation Administration through direct contributions (which do not have to be matched dollar for dollar) is helping underdeveloped countries to control specific diseases, to set up national and local health services and to establish environmental sanitation. Countries receiving money make contributions in cash, facilities or services in varying degrees.

Development Assistance Programs.....\$12,930,000
(Last year: \$ 5,300,000)

Spending for emergency health programs (particularly in malaria control on which there is new world-wide emphasis) under ICA direction is up from last year. The agency has \$2,500,000 for the Far East, and \$10,430,000 for the Near East, South Asia and Africa. The largest single beneficiary will be India.

DEPARTMENT OF STATE

(This Year: \$15,496,000 — Last Year: \$13,669,790)

United Nations Children's Fund.....\$9,700,000
(Last year: \$9,000,000)

The U. S. share of the Children's Fund is up about \$700,000 over last year for a total of \$9,700,000, but the percentage of U. S. contribution to the total fund has dropped slightly from 60% to 57.5%. This is due to the fact that some of the 65 other nations contributing have increased their share slightly. The fund is aiding about 264 health and medical projects in 92 countries and territories, benefiting 32 million children and mothers. Last year the fund aided 1,800,000 children for yaws, vaccinated 14,500,000 against tuberculosis, and 9,000,000 against malaria and other insect-borne diseases.

World Health Organization.....\$3,410,000
(Last year: \$3,349,790)

This country's share of the WHO budget remains at one-third of the total of all member-nation contributions. Among the 84 countries agreeing to make contributions is Russia, which until recently has been inactive. Last year WHO was sponsoring about 500 health projects in 106 countries and territories. WHO's overall budget is broken down this way: approximately 72% for operating programs, 10% for administration and salaries, and the rest for such expenses as holding international conferences and to compensate for non-payment by inactive member-countries.

Pan American Sanitary Bureau.....\$1,386,000
(Last year: \$1,320,000)

The U. S. is contributing approximately two-thirds of the Bureau's regular budget which this year totals \$2,100,000. In addition, this country plans an extra \$1,500,000 for 1957 malaria eradication programs. Because these international groups operate on a calendar year, the special contribution is not shown in this report. The Bureau, in existence many years before WHO was organized, is the regional office of WHO for the Americans. The Bureau is sponsoring health programs in 21 Latin American countries and the U. S.

Foreign Service Employees Medical Care.....(new category) \$1,000,000

The 84th Congress, under Public Law 828, broadened an existing medical care program for foreign service employees to take in their dependents, provided they are living overseas. State Department, which estimates that about 15,000 dependents are involved, has earmarked \$400,000 for the first year. The regular program for overseas employees is placed at \$600,000. Most of the care is provided in U. S. military facilities.

FEDERAL EMPLOYEES HEALTH PROGRAM

(This Year: approx. \$10,000,000 — Last Year: approx. \$6,000,000)

Another health program, this one available to all Federal civilian workers, provides limited services through health clinics. They are operated by Federal agencies which employ 300 or more persons in any one area. By regulation, maximum cost of a health service cannot exceed \$11 a year per employee, although special industrial conditions or minimal size unit may warrant a higher ceiling. Services include treatment for on-the-job illnesses and physical examinations for employment.

NATIONAL SCIENCE FOUNDATION

(This Year: \$8,000,000 — Last Year: \$5,000,000)

The Foundation's overall budget of \$40,000,000 is two and a half times last year's appropriation. While money earmarked for research grants in biological and medical sciences this year does not show the same proportionate increase, it is still considerably above fiscal 1956. The Foundation, now in its sixth year, initiates and supports basic scientific research, evaluates research of government agencies, and correlates research programs of various agencies.

DEPARTMENT OF LABOR

(This Year: \$7,151,126 — Last Year: \$7,336,000)

<i>Bureau of Employees' Compensation</i>	\$6,600,000
	(Last year: \$6,800,000)

An estimated 2,390,000 Federal workers now are eligible under the Federal Employees' Compensation Act for medical and hospital care, rehabilitation services, disability and death payments, and funeral and burial expenses. For treatment of employees by private doctors and hospitalization in private facilities, Labor Department has set aside \$4,500,000 this fiscal year, and for similar services in Federal hospitals and clinics, \$2,100,000. A slight shift is noted away from Federal facilities to private resources; last year's totals were \$4,349,218 and \$2,234,222.

<i>Bureau of Labor Standards</i>	\$551,126
	(Last year: \$536,000)

For promotion of industrial safety, the Bureau plans to spend \$387,322, and for re-employment programs of the physically handicapped, \$163,804. The agency develops standards for hazardous occupations, assists the states in accident prevention programs and trains personnel for administering various projects.

DEPARTMENT OF INTERIOR

(This Year: \$6,138,205 — Last Year: \$5,770,000)

<i>Bureau of Mines</i>	\$5,304,300
	(Last year: \$5,000,000)

Bureau spending for preventive health and safety in the mines is up from last year. The total is divided this way: \$3,874,300 for mine inspection and investigations; \$898,000 for investigations of accidents and rescue work, and \$532,000 for explosives testing and research.

<i>Office of Territories</i>	\$833,905
	(Last year: \$770,000)

Sometime after the first of the year the money earmarked for contract hospitalization at Morning-side Hospital, Portland, Oregon, of Alaskans judged insane will be transferred to the Territory of Alaska under Public Law 830, the Alaska Mental Health Act. This law provides that the Territory, with the help of the Public Health Service, will set up its own programs for the mentally ill.

PANAMA CANAL ZONE

(This Year: \$6,055,300 — Last Year: 5,702,900)

The total available for health and medical programs in the Panama Canal Zone is divided: \$5,452,400 for operation of three hospitals, one leprosarium, one medical clinic, two dental clinics and six first aid stations at which Zone employees, their dependents and other Zone residents receive treatment, and \$602,900 for public health activities and operations of the health director's office. The three hospitals have a bed capacity of 1,167.

DEPARTMENT OF TREASURY

(This Year: \$3,511,700 — Last Year: \$2,990,000)

The Bureau of Narcotics, operating within the Treasury Department, has added responsibilities under Public Law 728, 84th Cong., for the suppression of illegal traffic in drugs, and accordingly, spending plans are up from last year. The Bureau also is charged with administering the oral prescription law, P. L. 729, 83rd Cong.

DEPARTMENT OF JUSTICE

(This Year: \$1,580,000 — Last Year: \$1,470,000)

The figure represents the Bureau of Prisons' estimate of the cost of medical and dental services for over 20,000 prisoners in 29 Federal penal institutions. The bulk (about \$1,490,000) goes to commissioned officers of the Public Health Service assigned to the prisons and to related civil service personnel for services that include psychiatric, surgical and dental treatment. Another \$90,000 is earmarked for fees to 220 consultants in various medical specialties.

FEDERAL TRADE COMMISSION

(This Year: \$1,000,000 — Last Year: \$1,000,000)

The Commission plans to spend about the same as last year for research, testing and compliance operations in the field of foods, drugs, cosmetics and devices. This is nearly 20% of the agency's total budget of \$5,550,000. FTC is charged by Congress with the safeguarding of life and health of the public through the prevention of the dissemination of false advertisements of various products.

DEPARTMENT OF COMMERCE

(This Year: \$547,914 — Last Year: \$277,586)

Civil Aeronautics Administration \$419,414
(Last year: \$223,486)

Spending for the CAA flight safety program is well ahead of last year. It is divided as follows: \$197,315 for salaries and administrative expenses at headquarters, \$74,399 for similar expenses in regional office, \$47,700 for the CAA Medical Research Laboratory at Columbus, Ohio, and a special grant of \$100,000 to the Flight Safety Foundation. Four medical officers in the field supervise the periodic physical examinations required of commercial and private pilots. For this service, pilots pay examining physicians directly; CAA has 1,774 designated medical examiners in the U. S. and overseas who make about 180,000 examinations a year.

Bureau of Standards \$128,500
(Last year: \$ 54,100)

For highly specialized medical research and testing, the Bureau expects to spend about \$579,300 for various agencies of government; of this \$128,500 will involve Commerce funds, with the rest charged to the other agencies. Projects include research on radiation protection, radiological instrument evaluation, acoustic calibration, x-ray standards, and dental materials.

CIVIL SERVICE COMMISSION

(This Year: \$386,000 — Last Year: \$382,600)

The Commission's total budget is \$17,407,500, out of which little over 2% goes for running the medical division. It covers salaries for eight physicians in Washington and eleven in regional offices. The medical division's duties include establishing and reviewing physical standards for all civilian jobs in the Federal government, supervising and adjudicating disability claims for retirement, and setting professional standards of doctors and ancillary personnel to be employed in government.

NATIONAL ADVISORY COMMITTEE TO SELECTIVE SERVICE

(This Year: \$180,000 — Last Year: \$180,000)

The figure is the amount the Committee has available for staff salaries at Washington headquarters and its 51 state and territorial offices, plus administrative costs. The Committee advises Selective Service on deferment policies for physicians in residencies, teaching posts, essential laboratory and clinical research, and persons deemed necessary to protect civilian health.

PRESIDENT'S COMMITTEE FOR EMPLOYMENT OF PHYSICALLY HANDICAPPED

(This Year: \$134,678 — Last Year: \$130,000)

Projected spending is for salaries and administration in the development and promotion of educational programs among employers to stimulate them to hire more of the physically handicapped. It also entails expenses in connection with the National Employ the Physically Handicapped Week.

HEALTH RESOURCES ADVISORY COMMITTEE

(This Year: \$90,000 — Last Year: \$101,000)

The Committee advises the director of the Office of Defense Mobilization on broad health resources problems, including medical manpower and blood and related products. The Committee has the same membership as the National Advisory Committee to Selective Service.

OFFICE OF THE ATTENDING PHYSICIAN OF CONGRESS

(This Year: \$12,145)

Since 1928, the Office of the Attending Physician of Congress has provided out-patient care for members of the House and Senate and their staffs. By the act of that year, the office has been filled by a medical officer of the United States Navy. Sole occupant of the post has been Rear Admiral George W. Calver (M.C.), U.S.N. Funds voted by Congress are for medical supplies and equipment and contingent expenses. Salaries of the physicians and four enlisted men are paid out of Navy Bureau of Medicine and Surgery funds.

**PARTIAL REPORT ON ACTIONS OF THE
HOUSE OF DELEGATES
AMERICAN MEDICAL ASSOCIATION
TENTH CLINICAL MEETING**

NOV. 27 - 30, 1956

Seattle, Wash.

Medical ethics, veterans' medical care, radioactive isotopes, continuance of the A. M. A. interim session, hospitalization for patients with alcoholism and a report of the Committee on Medical Practices were among the wide variety of subjects acted upon by the House of Delegates at the American Medical Association's Tenth Clinical Meeting held Nov. 27-30 in Seattle.

Dr. Edward M. Gans of Harlowton, Montana, was announced at the opening session, Tuesday, as the 1956 General Practitioner of the Year. The annual award, carrying with it a gold medal and a citation, is presented to a family doctor selected by a special committee of the Board of Trustees for outstanding community service. Dr. Gans, who is 80 years old, has practiced medicine for 51 years and has been in the Harlowton area for the past 44 years.

Strongly condemning government intervention in medicine, Dr. Dwight H. Murray of Napa, Calif., A. M. A. President, told the opening session that "the medical profession, along with business and industry, is caught between those who desire to promote sound government programs and those who desire even more intensely to perpetuate party politics. Unfortunately, in recent years a benevolent federal government appears more attractive to the voting public than the preservation of individual freedoms. Medicine must do its utmost to reverse this trend."

Total registration at the end of the third day of the meeting, with half a day still to go, had reached 5,191, including 2,738 practicing physicians and 2,453 residents, interns, medical students, nurses and guests.

Medical Ethics

Subject of greatest interest at Seattle was the proposed, ten-section revision of the Principles of Medical Ethics originally submitted at the June, 1956, Annual Meeting in Chicago, where final action was deferred until the Seattle session. The proposed short version of the Principles was resubmitted with some changes based on suggestions received since last June by the Council on Constitution and By-Laws. The House of Delegates, however, decided to refer the matter back to the Council on Constitution and By-Laws for further study and consideration. The reference committee report adopted by the House included the following statements:

"Careful consideration was given to the Preamble and the ten sections of the proposed Principles. The Preamble and seven of the ten sections appear to be acceptable in their present form.

"Sections 6 and 7 were not acceptable as presented either to the group which appeared at the hearing or to your reference committee.

"Out of the general discussion the reference committee received the crystallized opinion that at least four areas needed more specific attention in Sections 6 and 7. These are:

- "(1) Division of fees;
- "(2) The dispensing of drugs and appliances;
- "(3) The corporate practice of medicine;
- "(4) Greater emphasis concerning the relationship between physicians and patients.

"In addition, the reference committee felt that the wording in Section 10 could be improved if amended to read as follows:

"The responsibilities of the physician extend not only to the individual but also to society and deserve his interest and participation in activities which have as their objective the improvement of the health and welfare of the individual and the community."

"In view of the above your reference committee believes that the proposed Principles of Medical Ethics should be referred back to the Council on Constitution and By-Laws for further study and consideration of the above stated principles.

"In the short space of time at our disposal and in view of the importance of the subject, your reference committee did not deem it wise to attempt to properly phrase these concepts.

"We would also recommend that if possible this study be completed at least six weeks prior to the June session and that the new version be published in THE JOURNAL in order that all interested physicians might have an opportunity to comment thereon."

Veterans' Medical Care

The House revised A. M. A. policy on veterans' medical care by endorsing in principle the following paragraph suggested by the Council on Medical Service:

"With respect to the provision of medical care and hospitalization benefits for veterans in Veterans Administration and other federal hospitals that new legislation be enacted limiting such care to veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated."

This action eliminates the temporary exceptions which were made in the June, 1953, policy regarding wartime veterans who are unable to defray the expenses of necessary hospitalization for non-service-connected cases of tuberculosis or psychiatric or neurological disorders. In making the policy change, the House approved this supplementary statement:

"We recognize the laws and administrative extensions of the law that are now in operation. We feel that under the circumstances it will be to the best interests of the public in general, and veterans in particular, if medical societies, coun-

ty and state as well as national, develop committees to assist in guaranteeing VA hospital admission to service-connected cases. While the present law exists, we should help assure that veterans whose illness constitutes economic disaster will not be displaced by those suffering short-term remediable ills which, at the worst, constitute financial inconvenience."

In another action concerning veterans, the House passed two resolutions condemning as unlawful the practice of Veterans Administration hospitals which admit patients who are covered by workman's compensation insurance or by private health insurance and which render bills for the cost of their care. Both resolutions requested the A. M. A. to take action to bring about a discontinuance of such practices by VA hospitals, and one of them instructed the Association Secretary to obtain from each state testimony or records of each known case that violates VA Reg. 6047-D1.

Radioactive Isotopes

The House rescinded the June, 1951, action, which limited the hospital use of radium and radioactive isotopes to board-certified radiologists, by approving a new policy statement which says:

"(1) In any hospital in which a patient is to receive radium or the products of radium or artificially produced isotopes, there should be a duly appointed Committee on Radium and Artificially Produced Radioisotopes of the hospital professional staff. This committee should include, but not necessarily be limited to, the following qualified physicians: a radiologist, a surgeon, an internist, a gynecologist, a urologist and a pathologist. This committee should have available such competent consultation of other physicians and scientific personnel as may be required by it. Where this is not practicable, the hospital staff should consult the nearest Committee on Radium and Artificially Produced Radioisotopes.

"(2) In any hospital, the use of radium or its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes shall be restricted to qualified physicians so judged by the Committee on Radium and Artificially Produced Radioisotopes of the professional staff to be adequately trained and competent in their particular use.

"(3) It is recommended that procurement, storage, dosimetry control and inventory of all radioactive isotopes for the use of the hospital staff and radiological safety control be centralized, and, where administratively possible, centralization be located in the Department of Radiology.

"(4) It is recommended that the Board of Trustees assign to the appropriate council or committee the continuous study of the problems of radiological safety control in the use of radium

and its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes."

Clinical Meetings.

Rejecting a resolution which recommended discontinuance of the interim sessions, or clinical meetings, the House adopted a reference committee report which said:

"We believe that the interim sessions should be continued because of the public relations value of these meetings to the Association and the educational value to physicians and the general public in the various geographical areas involved.

"It is the suggestion of the reference committee that maximum attention be given to these potential benefits in selecting a city for the interim meeting.

"It is our further recommendation that the Board of Trustees consider the advisability of holding an Interim Meeting of the House of Delegates in Chicago each November or December and an Interim Scientific Session in November or December of each year in different parts of the United States. The reference committee suggests that the views of the Board of Trustees in this regard be reported to the House of Delegates next June."

Hospitalization for Alcoholics

To implement educational approaches to the problem of alcoholism, the House approved a statement submitted through the Board of Trustees by the Council on Mental Health and its Committee on Alcoholism. The House also recommended that the statement be brought to the attention of the Council on Medical Education and Hospitals, the Joint Commission on Accreditation of Hospitals and the American Hospital Association. It includes the following:

"The Council on Mental Health urges hospital administrators and the staffs of hospitals to look upon alcoholism as a medical problem and to admit patients who are alcoholics to their hospitals for treatment, such admission to be made after due examination, investigation and consideration of the individual patient. Chronic alcoholism should not be considered as an illness which bars admission to a hospital, but rather as a qualification for admission when the patient requests such admission and is cooperative, and the attending physician's opinion and that of hospital personnel should be considered. The chronic alcoholic in an acute phase can be, and often is, a medical emergency."

Committee on Medical Practices

In approving a progress report of the Committee on Medical Practices, the House amended one of its directives to read as follows in order to remove any legal objections:

"The A. M. A. representatives on the Joint Commission on Accreditation of Hospitals be instructed to stimulate action by that body leading

to the warning, provisional accreditation, or removal of accreditation of community or general hospitals which exclude or arbitrarily restrict hospital privileges for generalists as a class regardless of their individual professional competence where such policies adversely affect the quality of patient care rendered. Any action taken should be only after appeal to the Commission by the county medical society concerned."

The House also approved a recommendation by the Committee on Medical Practices that a study group be formed to consider the best background preparations for general practice, and it urged that such action be implemented as soon as practicable.

Miscellaneous Actions

Among many other actions on a wide variety of subjects, the House of Delegates also:

Urged the widest possible publication and distribution of Dr. Murray's **presidential address** at the opening session;

Pledged the full support of the Association's initiative and energy to President Eisenhower's **people-to-people program** as a means of promoting understanding, peace and progress;

Directed the Board of Trustees to continue its investigation of the practicability of developing a **statement of A. M. A. policies** and to arrange for the periodic publication of revised versions of such a policy statement;

Commended the objectives of the American Association of **Medical Assistants** and its sincere desire to work closely with the medical profession in improving medical service and medical public relations;

Noted with pride the good work being done by the 74,348 members of the **Woman's Auxiliary**, as reported to the House by Mrs. Robert Flanders, President;

Directed the Councils on Pharmacy and Chemistry and on Foods and Nutrition to conduct a joint study of all presently available information concerning the **fluoridation of public water supplies** and to present a documented report of findings and recommendations at the December, 1957, meeting;

Urged all physicians to participate actively in the formulation of medical policy for **prepaid medical care plans** which are under physician direction or sponsorship;

Changed the By-laws to extend **service mem-**

bership to reserve officers on extended active duty with the defense forces and the U. S. Public Health Service;

Changed the By-laws relating to **transfer of membership** so that an active or associate member of the Association who moves his practice to another jurisdiction may continue his A. M. A. membership by applying for membership in the constituent association in his new jurisdiction, subject to a two-year limit on approval of his application;

Changed the By-laws so that the **election of officers** may take place at any time on the fourth day of the annual session, instead of being restricted to the afternoon of that day;

Passed a resolution calling for the American Medical Association to join with the American Hospital Association and the American Institute of Architects in their proposed **study of hospital design and construction**;

Approved the principle of a voluntary reduction in the self-assigned **quota of interns** as printed in the 1956 handbook of the National Intern Matching Program, and

Instructed the Board of Trustees to accentuate cooperation between the American Medical Association and the American Bar Association to the end that a bill of the **Jenkins-Keogh** type be enacted at the next session of Congress.

Opening Session

At the Tuesday opening session Dr. Murray, on behalf of the American Medical Association, presented a special citation to Ciba Pharmaceutical Products, Inc., for "the service it has performed to the medical profession and to the nation through its weekly television series, 'Medical Horizons'." At the same session the American Medical Association and four of its constituent societies — California, Arizona, Utah and New Jersey — contributed nearly \$300,000 to the American Medical Education Foundation for aid to the nation's medical schools. The A. M. A. announced another gift of \$125,000, bringing this year's total contribution to \$343,000. The amounts presented by the four states were: California, \$132,981; New Jersey, \$25,000; Utah, \$11,870, and Arizona, \$3,695.

George F. Lull, M. D.

Secretary-General Manager

American Medical Association

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Thursday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

LEPTOSPIROSIS

Charles T. Caraway, D.V.M., Epidemiologist with the Louisiana State Department of Health, calls attention to the occurrence of human leptospirosis and recommends that physicians be on the alert for this disease when patients, especially livestock owners, farm workers, slaughterhouse workers and others who have intimate contact with pets, present themselves with a history of animal contact, chills, fever, nausea, vomiting, muscular pains, conjunctivitis or findings suggestive of pneumonia or meningitis.

Leptospirosis in animals is a fairly common disease and is a threat to all persons who have close contact with animals or rodents.

Human leptospirosis is a recreational as well as an occupational disease.

In July 1950 an outbreak due to *L. pomona* occurred in Alabama. About 50 of 80 persons who had been swimming in a creek developed leptospirosis. Dead hogs had been floating in the creek and its branches. Sera obtained from hogs, cows, horses and mules that had access to the stream showed positive tests for *L. pomona* infection.

North Carolina has reported a case of leptospirosis due to *L. pomona* in an 8 year old negro boy who had contact with an infected milk goat. Goat urine could also have contaminated the shallow well from which this child obtained drinking water. Ante mortem tests on the goat's serum were positive for *L. pomona*. The goat was sacrificed and post mortem *L. pomona* was isolated from its tissues.

L. icterohaemorrhagiae was isolated post mortem from the kidney of a pet dog in Louisiana. About ten days later his owner became ill. His symptoms were fever, backache, headache, nausea and vomiting. Serological studies indicated that the owner had also experienced an infection with *L. icterohaemorrhagiae*. Five other members of this man's household had an illness, at

the same time, compatible with a mild leptospirosis; however, the Department of Health was unable to confirm the diagnosis in these five people who received treatment early in their illness.

Other human cases of leptospirosis in Louisiana have been investigated in which the evidence suggested domestic animals as the source of infection.

The Department of Health believes that many human cases of leptospirosis are occurring which remain unrecognized.

Physicians desiring serologic study of their suspect cases can submit 10-20 cc. of serum or blood from the suspect to the State Department of Health Laboratory serving their part of the state. The request which accompanies the specimen should show the name, age, sex, race, and address of the patient, whether or not the patient is hospitalized, and if so, the name of the hospital, and the name and address of the physician to whom the report is to be sent. A short clinical history should also accompany the specimen.

The blood or serum should be submitted as a paired specimen with the first blood being collected during the acute illness, or as soon thereafter as possible, and the second blood 2-4 weeks after the first. The data sheet accompanying the specimens should show whether the specimen is the first or second of the sample, and, if the first, whether or not a second (convalescent) specimen is to follow.

The Department of Health will do a titrated complement-fixation test on the specimens and the results will be sent to the physician as soon as they are available.

PORTABLE ELECTRONIC CARDIAC
MONITOR DESCRIBED

A three-pound, 120-cubic-inch device which shows visually the electrical impulses of the

heart during surgery or resuscitation was described recently.

Six researchers from the Veterans Administration Hospital, Hines, Ill., said the cardiac monitor was devised to help surgeons and anesthesiologists during surgery, but it could be used by police and fire department rescue and resuscitation squads to tell if the heart is functioning in cases of drowning, electric shock, auto accidents, and severe injury.

The electronic monitor, which is powered by four flashlight batteries, was described in the Oct. 6 1956 Journal of the American Medical Association. Electrodes attached to the forearms of the patient pick up the cardiac impulses and feed them into the monitor where they are indicated by a magnetic needle.

If the heart is functioning normally, the needle shows a uniform movement. However, when the needle produces small, irregular and erratic movements, it is a sign of ventricular fibrillation, a condition in which the heart ceases to beat regularly and the muscle twitches. Cardiac arrest—or sudden unexplained heart stoppage—is indicated when the needle stops altogether.

The monitor is especially useful, the authors said, in situations of extreme shock, severe hemorrhage or suffocation where blood pressure and pulse rate sometimes may fall to imperceptible levels. In such cases the monitor can show that the heart is still functioning even though there is no detectable pulse. This should prevent unnecessary opening of the chest for cardiac massage and speed the beginning of proper treatment, they said.

SYMPOSIUM ON FATS IN HUMAN NUTRITION

A symposium on Fats in Human Nutrition with particular attention to Fats, Cholesterol and Atherosclerosis will be held in New Orleans, March 15, 1957. It will be cosponsored by the New Orleans Graduate Medical Assembly, the Orleans Parish Medical Society, Louisiana State University School of Medicine, Tulane University School of Medicine, and the Council on Foods and Nutrition of the American Medical Association. Speakers of national prominence have been invited to participate, including Dr. Edward H. Ahrens, Jr., Associate Physician, Rockefeller Institute Hospital; Dr. W. Stanley Hartcroft, Chairman, Department of Pathology, Washington University Medical School; Dr. L. Emmett Holt, Jr., Director of Pediatrics, New York University, College of Medicine; Dr. Ancel Keys, Director, Laboratory of Physiological Hygiene, University of Minnesota; Dr. Frederick J. Stare, Chief, Department of Nutrition, Harvard University School of Public Health; and Dr. Donald S. Frederickson, National Heart Institute. The American Academy of General Practice is offer-

ing six hours of formal credit to those who attend.

This symposium follows the twentieth annual meeting of The New Orleans Graduate Medical Assembly.

Plan now to stay an extra day and attend this meeting.

LIST OF HABIT-FORMING QUALITIES OF MEPROBAMATE

A Seattle physician warned that the tranquilizing drug, meprobamate (Miltown or Equanil), can be habit-forming in a small percentage of cases.

Dr. Frederick Lemere gave his warning because of the unprecedented demand for the drug, because of talk of selling meprobamate over the counter without a prescription, and because it has been advertised as non-habit forming.

He has seen a few individuals show the standard symptoms of addiction, including a psychological craving for the drug based on its pleasant effects, a build-up or tolerance requiring increasingly larger doses to produce the same effect, and withdrawal symptoms when the drug is suddenly discontinued.

However, meprobamate is still the "most helpful and least harmful of all drugs used for the relief of nervous and emotional tension," but its habit-forming qualities for some persons indicates the necessity for careful supervision of its use, Dr. Lemere said in the August 1956 Archives of Neurology and Psychiatry, published by the American Medical Association.

Dr. Lemere noted withdrawal symptoms among some of his patients. These included feelings of "nervousness," "the jitters," or "let down" when the patients missed their usual doses of meprobamate. One patient experienced the first convulsion of his life 10 hours after discontinuing the medicine. While this may be coincidence, the pattern was similar to the convulsions seen after sudden withdrawal from alcohol or barbiturates.

"A psychological dependency on the drug is also undoubtedly created in certain patients," he said.

Many feel so much less tense when taking the drug that there may be an exaggerated feeling of well-being. In most cases this does not appear to be harmful, but in a few patients it may lead to overdosage on the basis that "if one pill helps, three will help three times as much," he said.

POSTGRADUATE CONFERENCE

The Temple Division of the University of Texas Postgraduate School of Medicine offers the **Fifth SCOTT, SHERWOOD AND BRINDLEY FOUNDATION Postgraduate Conference** in Medicine and Surgery on March 4, 5, 6, 1957. For detailed information write: Director, Scott, Sherwood and Brindley Foundation, Scott and White Clinic, Temple, Texas.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

Old St. Nick was the guest of honor Wednesday, December 12th at the Orleans Club, where the Woman's Auxiliary to the Orleans Parish Medical Society held a Christmas Party for the children and grandchildren of the members. Mrs. John Toole's dramatic pupils entertained the group.

Hostesses for the event were Mms. Peter Everett, Isidore Dyer, Homer Dupuy, Joel B. Gray, Milton L. McCall, A. J. McComiskey, Lawrence McCune, Howard Mahorner, Howard Russell, Paul L. Getzoff, Joseph D. Russ, and Edwin R. Guidry. Pouring tea and coffee were Mrs. Reichard Kahle and Mrs. Robert Rougelot.

These are some of the good little boys and girls to whom Santa gave toys and candy: Deborah and John Currier III, David and Daniel Silverman III, Linda McCall, Lynn and Ann Schneider, Maureen, Kathleen and John Walsh, Jr., Vince and JoAnn DiLeo, Paul Giarlendo, Sandy Ward, David Parker, Linda Golden, Ellen Tomskey, Mary Carol Guidry, Nathan and Debra Jean Fischman, Judy Davis, Wallace, Mary Clare, Judy, Lynn, Peggy and Elizabeth Landry, Tra, Agna and Elsa Caire, Randy and Lawrence McCall, Catherine Sherwood, Mary Franklin John-

son, Mary Catherine, Martha, Patricia and Joe Hopkins, Shannon and Janet Comer, Paul Rosenthal, Betsy McGinnis, Adelaide and Olivia Hebert, Marie Lucille Pollingue, Don Faust, Thomas E. Campbell, Lee Washburn, Fran and Brownell Chalmstrom, Eric, Richard and Frank Oser III, Mary Elizabeth, Shirley Ann and Alice Mary Muhleisen, Hugh Dyer, Lynne Harris, Charles, Debrah, and Charlotte Bahn, Jan and Kenneth Gillespie, Sidney, Louise and Anne Tiblier, Janet, Paul and Stephen Mogabgab, Penelope, Stephen and Jody Cranfield, Suzanne, George, Kenneth and Barrett Haik, Blaise and Laurence Salatch, Anita Morrison, Paul Lastrapes, Jr., Rose Merle Failla, Carolyn, John and Jeanne Nabos, Marcia Grimm, Ronald, Gary, Bruce and Faye Ellen Furlow, Martha and Joan Jackson, Karen Roberts, Missy Gisclair, Patricia Habeeb, Elizabeth Mahorner, Mary Margaret Ruli, Suzanne Stouse, Foster Hebert, Gary Brewster, Bradley and Charles Farris III, Robert Goldsmith, and Cody Aime Kelleher.

Wed. Jan. 9th is the date of the next Auxiliary meeting.

Mrs. Beryl Kelleher,
Publicity Chairman

BOOK REVIEWS

Beyond the Germ Theory; by Iago Galdston, M.D. (ed.), New York, N. Y., Health Education Council, 1954, Pp. 182, \$4.00.

This interesting book attempts to describe the roles of deprivation and stress in health and disease. The material is well organized into four sections: (1) Dynamics of deprivation and stress, (2) Nutritional deprivation and stress, (3) Psychological deprivation and stress, and (4) Social stress and deprivation.

Dr. Galdston in the first chapter succinctly summarizes the development of the germ theory. He points out that the concept of homeostasis offers broad utilization of the germ theory and more recent ideas of stress. "To maintain homeostasis . . . man must have access to the balancing factors involved in the process. Unless man can obtain what is required and convert or eliminate what is in excess, he cannot maintain homeostasis—or health. This lays bare a new science of pathology, that of deprivation: disease due to the lack of essentials."

The contributing authors support this thesis with evidence from many branches of medicine: public health, metabolic disorders, obstetrics, psychobiology, internal medicine, and psychiatry. Their writings are stimulating and the book would seem to be an excellent reference for medical students, student nurses and others in the training stages.

IRVIN A. KRAFT, M. D.

Practical Medical Mycology; by Edmund L. Keeney, Springfield, Illinois. Charles C Thomas, 1955, Pp. 145, Price \$4.50.

As the publisher has stated, the subject matter is presented in "simple, compact, factual style" which makes the text a good review of a complicated subject. The author has perhaps wisely concentrated his efforts toward a concise presentation of epidemiology, clinical picture, and treatment. Mycology per se is very simplified and the forbidding details are omitted.

By this omission, the text alone becomes of limited value to students and teachers of medical mycology. The illustrations which are diagrammatic are next to meaningless unless the reader has a previous knowledge of the organism. With such a knowledge, however, the illustrations readily recall to mind the pertinent points.

LORRAINE FRIEDMAN, PH.D.

PUBLICATIONS RECEIVED

The American Public Health Association, Inc., N. Y.: Services for Children with Hearing Impairment; Services for Children with Vision and Eye Problems.

Grune & Stratton, Inc., N. Y.: Children's Eye Problems, by Emanuel Krinsky, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: Training of the Lower Extremity Amputee, by Donald Kerr, B.B.A., and Signe Brunnstrom, M.A., with introduction by T. Campbell Thompson, M. D.

DIAGNOSTIC AID

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*Roentgenograms courtesy of I. Richard Schwartz, M.D., Kings County Gastrointestinal Clinic, Brooklyn, N. Y.

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A high-contrast, black and white photograph. In the foreground, the word "MYCIN" is written in large, thick, white, hand-drawn letters against a dark background. Behind the letters, a person is visible, standing and looking down at the word. The person is wearing a dark jacket and a light-colored shirt. The overall effect is dramatic and artistic, suggesting a human element in the scientific or medical field.

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The place of dietary fat in human nutrition is being widely discussed. Scientists who know tell us that some fat is desirable in our everyday diet whether body weight has to be reduced or not.

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The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

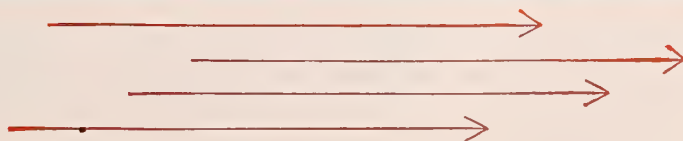
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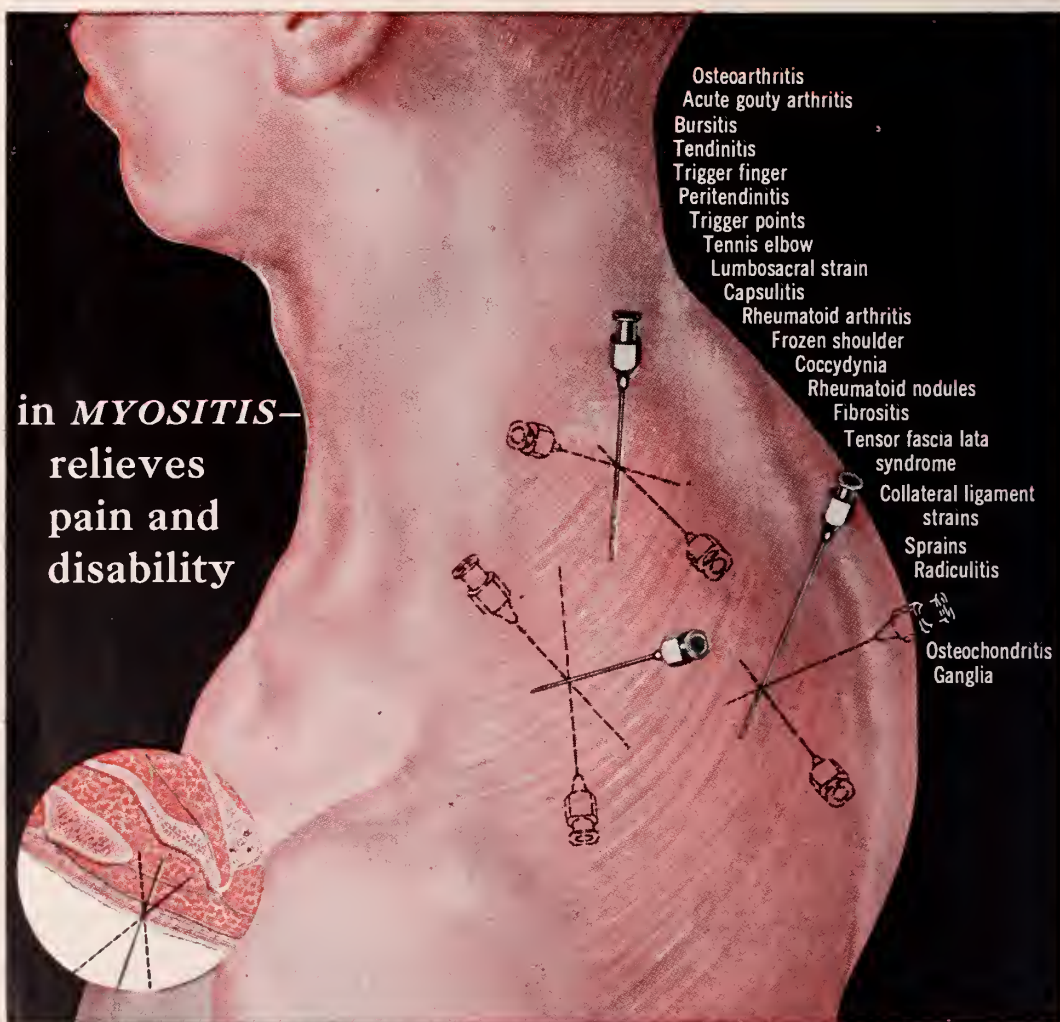


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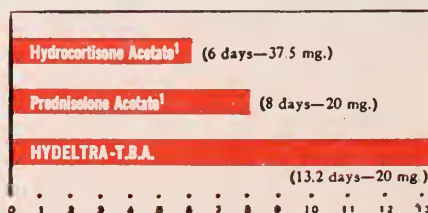
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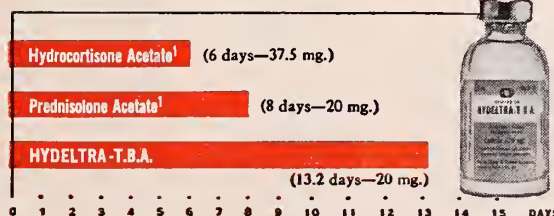
for relief that lasts—longer

in *COLLATERAL*
LIGAMENT
STRAINS—
 allows early
 ambulation—
 relieves pain
 and swelling



Rheumatoid arthritis
 Osteoarthritis
 Acute gouty arthritis
 Bursitis
 Sprains
 Tendinitis
 Trigger finger
 Peritendinitis
 Trigger points
 Tennis elbow
 Lumbosacral strain
 Capsulitis
 Frozen shoulder
 Coccydynia
 Rheumatoid nodules
 Fibrositis
 Tensor fascia lata
 syndrome
 Collateral ligament
 strains
 Radiculitis
 Osteochondritis
 Ganglia

Duration of relief
 exceeds that
 provided by any
 other steroid
 ester



Dosage: the usual intra-articular, intra-bursal or soft tissue dose ranges from 20 to 30 mg. depending on location and extent of pathology.

Supplied: Suspension 'HYDELTRA'-T.B.A.—20 mg./cc. of prednisolone tertiary-butylacetate, in 5-cc. vials.



MERCK SHARP & DOHME
 DIVISION OF MERCK & CO., INC.
 PHILADELPHIA 1, PA.

NEW HYDELTRA®-T.B.A.

(Prednisolone tertiary-butyacetate, Merck)

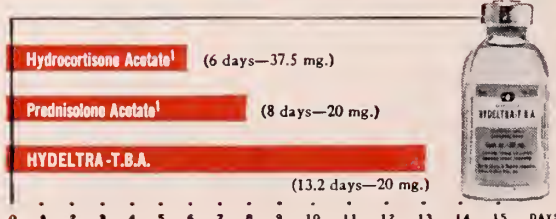
for relief that lasts—longer

in *TENOSYNOVITIS*—
often frees
“locked”
tendons
without
need
for surgery



Osteoarthritis
Rheumatoid arthritis
Acute gouty arthritis
Bursitis
Tendinitis
Trigger finger
Tenosynovitis
Trigger points
Tennis elbow
Lumbosacral strain
Capsulitis
Frozen shoulder
Coccydynia
Rheumatoid nodules
Fibrositis
Tensor fascia lata
syndrome
Collateral ligament
sprains
Spirals
Radiculitis
Osteochondritis
Ganglia

Anti-inflammatory
effect lasts longer
than that provided
by any other
steroid ester



Dosage: the usual intra-articular, intra-bursal or soft tissue dose ranges from 20 to 30 mg. depending on location and extent of pathology.

Supplied: Suspension "HYDELTRA"-T.B.A.—20 mg./cc. of prednisolone tertiary-butyacetate, in 5-cc. vials.



MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
PHILADELPHIA 1, PA.

¹ Hollander, J. L., Paper read at conference in New York City, May 31 and June 1, 1955

NEW HYDELTRA®-T.B.A.

[Prednisolone tertiary-butylacetate, Merck]

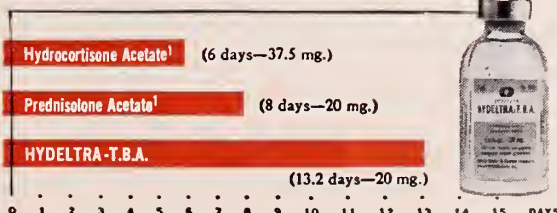
for relief that lasts—longer

in **TRIGGER POINT
TENDERNESS**—
permits
painless
movement



Bursitis
Rheumatoid arthritis
Osteoarthritis
Acute gouty arthritis
Tendinitis
Trigger finger
Peritendinitis
Trigger points
Tennis elbow
Lumbosacral strain
Capsulitis
Frozen shoulder
Coccydynia
Rheumatoid nodules
Fibrositis
Tensor fascia lata
syndrome
Collateral ligament
sprains
Sprains
Radiculitis
Osteochondritis
Ganglia

Duration of relief
exceeds that
provided by any
other steroid
ester



Dosage: the usual intra-articular, intra-bursal or soft tissue dose ranges from 20 to 30 mg. depending on location and extent of pathology.

Supplied: Suspension 'HYDELTRA'-T.B.A.—20 mg./cc. of prednisolone tertiary-butylacetate, in 5-cc. vials.



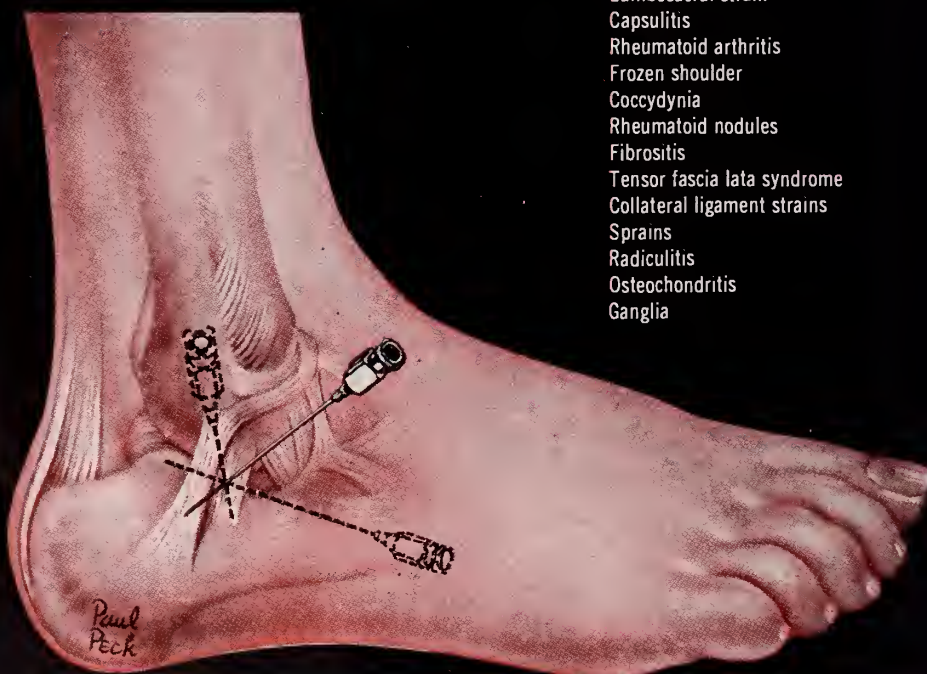
MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC.
PHILADELPHIA 1, PA.

NEW **HYDELTRA®-T.B.A.**

(Prednisolone tertiary-butylacetate, Merck)

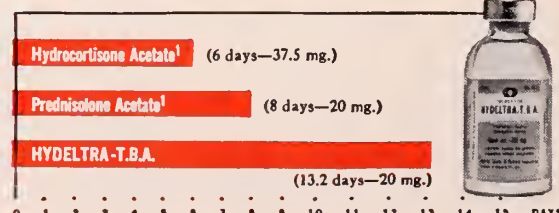
for relief that lasts—longer

in *SPRAINS*—
reduces tenderness,
swelling and
limitation of motion



Osteoarthritis
Acute gouty arthritis
Bursitis
Tendinitis
Trigger finger
Peritendinitis
Trigger points
Tennis elbow
Lumbosacral strain
Capsulitis
Rheumatoid arthritis
Frozen shoulder
Coccydynia
Rheumatoid nodules
Fibrositis
Tensor fascia lata syndrome
Collateral ligament strains
Sprains
Radiculitis
Osteochondritis
Ganglia

**Anti-inflammatory
effect lasts longer
than that provided
by any other
steroid ester**



Dosage: the usual intra-articular, intra-bursal or soft tissue dose ranges from 20 to 30 mg. depending on location and extent of pathology.

Supplied: Suspension 'HYDELTRA'-T.B.A.—20 mg./cc. of prednisolone tertiary-butylacetate, in 5-cc. vials.



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when you want broad spectrum antibiotic therapy with added safety for the many common respiratory, gastro-intestinal and urinary tract infections . . . the product to prescribe is

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Squibb Tetracycline - Nystatin

the ONLY broad spectrum antibiotic preparation with added protection against monilial superinfection

when you want specific antibiotic therapy for infections caused by *Candida albicans* (monilia) . . . the product to prescribe is

MYCOSTATIN

Squibb Nystatin

the ONLY effective and safe antifungal antibiotic available

for "This Wormy World"



Pleasant tasting

'ANTEPAR'[®] brand

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SYRUP • TABLETS • WAFERS

Eliminate **PINWORMS IN ONE WEEK**
ROUNDWORMS IN ONE OR TWO DAYS

PALATABLE • DEPENDABLE • ECONOMICAL

NEW **'ANTEPAR' SYRUP** - Piperazine Citrate, 100 mg. per cc.
'ANTEPAR' TABLETS - Piperazine Citrate, 250 or 500 mg., scored
'ANTEPAR' WAFERS - Piperazine Phosphate, 500 mg.

Literature available on request



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

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LYSINE-VITAMIN SUPPLEMENT LEDERLE

outstanding
appetite
stimulant in

NEW TABLET FORM

Specify INCREMIN TABLETS to stimulate appetite in your problem-eater, underweight, or generally below-par patients of all ages.

INCREMIN TABLETS are highly palatable, caramel flavored. May be orally dissolved, chewed, or swallowed. Dosage only 1 tablet daily.

Each INCREMIN TABLET contains:

I-Lysine	300 mg.
Vitamin B ₁₂	25 mcgm.
Thiamine (B ₁)	10 mg.
Pyridoxine (B ₆)	5 mg.
(INCREMIN Drops contain 1% alcohol)	

Remember INCREMIN DROPS. Same formula. Cherry flavor. Can be mixed with milk, milk formula, or other liquid. In 15 cc. polyethylene dropper bottle. *Dosage:* 0.5 to 1 cc. (10-20 drops) daily.



LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, N. Y.

*Reg. U. S. Pat. Off.

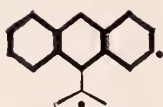
severe asthma

*is usually aggravated
and prolonged
by a strong emotional overlay*

In one study, 'Thorazine'
relaxed and improved 11 of
12 patients within one hour
after injection . . . in one case
"appeared to be life-saving."¹

'Thorazine' promptly alleviates the emotional
stress which may precipitate, aggravate or
prolong an asthmatic attack. It enables the patient
to sleep, yet does not depress respiration.

Available: Ampuls, Tablets, Syrup (as the
hydrochloride), and Suppositories (as the base).



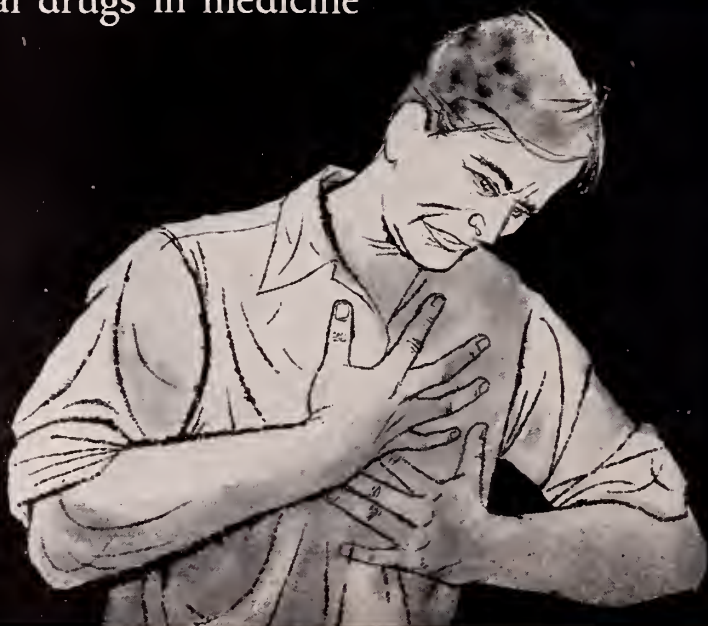
Smith, Kline & French Laboratories, Philadelphia


1. Ende, M.: Am. Pract. & Dig. Treat. 6:710 (May) 1955.

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.

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one of the fundamental drugs in medicine

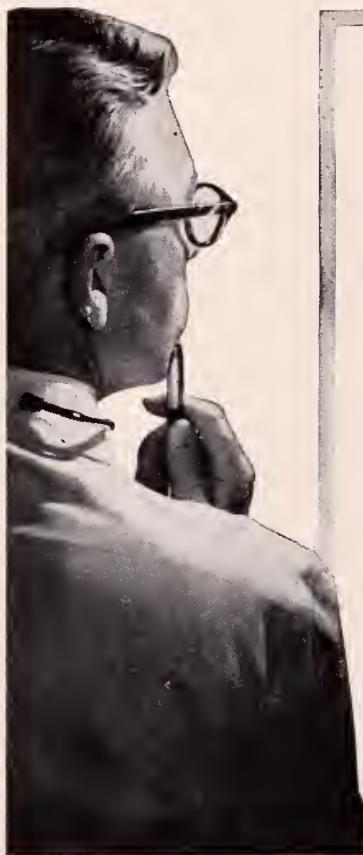




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be helpful to you in your practice to know that there is a food available at reasonable prices in the stores the year round having these attributes:

1. High public acceptance as to flavor and palatability—billions eaten annually.
2. One of the best of the “protective” foods with a well-rounded supply of vitamins and minerals.
3. Low sodium—very little fat—no cholesterol.
4. Sealed by nature in a dust-proof package.
5. One of the first solid foods fed babies.
6. Can be easily digested by old folks as well as infants.
7. Can be readily eaten out of hand, in milk shakes, on cereals, or in salads.
8. Can be baked, broiled or fried.
9. Can be used as an ingredient product in breads, pies, cakes and desserts.
10. Useful in bland and low-residue diets.
11. Mildly laxative.
12. May be used in the management of both diarrhea and constipation.
13. Can be used in reducing diets.
14. Can be used in high-calorie diets.
15. Useful in the dietary management of celiac disease.
16. Useful in the dietary management of idiopathic non-tropical sprue.
17. Useful in the management of diabetic diets.
18. Valuable in many allergy diets.
19. Belongs among foods useful in certain acute intestinal infections.
20. A protein sparer.
21. Favorably influences mineral balance.
22. Useful in the management of ulcer diets.
23. One of the easiest foods to eat or prepare.



The answer is

B A N A N A S

If you would like

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made on the preceding page...
2. Additional information in connection with any of them...
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5. Information on various ways to prepare or serve bananas.

Please feel free to write to

Director, Chemical and Nutrition Research, United Fruit Company

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For Real Pain ... give real relief:

A.P.C.^{WITH} Demerol[®] tablets

Each tablet contains:

Aspirin	200 mg. (3 grains)
Phenacetin	150 mg. (2½ grains)
Caffeine	30 mg. (½ grain)
Demerol hydrochloride....	30 mg. (½ grain)

Average Dose:

1 or 2 tablets.

Narcotic blank required.

Potentiated Pain Relief

WINTHROP LABORATORIES

New York 18, N. Y. • Windsor, Ont.

Demerol (brand of meperidine),
trademark reg. U.S. Pat. Off.



Tastiest way to dissolve sore throat symptoms



(HYDROCORTISONE-BACITRACIN-TYROTHRIN-
NEOMYCIN-BENZOCAINE TROCHES)

Adult or juvenile, your patients with sore throats will welcome a course of HYDROZETS. These newest Merck Sharp & Dohme troches offer anti-inflammatory, anti-infective and analgesic properties that promptly alleviate distressing mouth or throat irritation whether caused by infection, mechanical injury or allergic reaction. And HYDROZETS taste so good, it's hard to believe they're medicine.

Formula: Each HYDROZETS Troche contains—2.5 mg. 'HYDROCORTONE' to reduce pain, heat and swelling; 50 units Zinc Bacitracin, 1 mg. Tyrothricin and 5 mg. Neomycin Sulfate to combat gram-positive and gram-negative bacteria; and 5 mg. Benzocaine for rapid soothing analgesia.

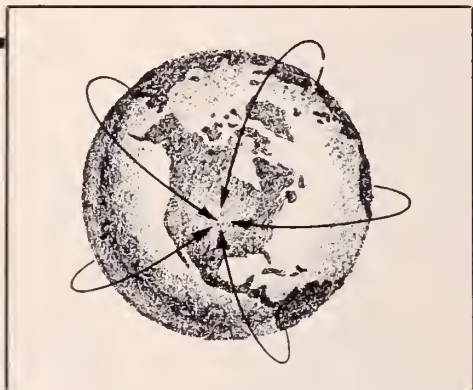
Other indications: As adjunct therapy in aphthous ulcers, acute and chronic gingivitis and Vincent's infection.

Supplied: Vials of 12 troches.



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DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.



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...IN URINARY COMPLAINTS

- * Sterilizes urine in 1 to 3 days
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The original Azo-Sulfa Formula* • Antibacterial • Analgesic

LOCALIZED MUCOSAL ANALGESIA

Phenylazo-diamino-pyridine HCl—acts solely on the urogenital mucosa; provides prompt relief from burning, pain and frequency.

LOCALIZED ANTIBACTERIAL ACTIVITY

Sulfacetamide—eliminates mixed infections rapidly because of its unusual solubility in acid urine common to bacterial invasion of the urinary tract. No renal damage, concretions or anuria.

...and when Spasmolysis is essential

sulfid* B-A

Antibacterial • Analgesic • Antispasmodic

—the dual activity of SULFID with the well-known antispasmodic effect of natural belladonna alkaloids.

Introduced—July, 1954



PHARMACAL COMPANY COLUMBUS 16, OHIO

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for your Rheumatoid Arthritis patient

for the objective symptoms
for the subjective distress

the first
and only
ataraxic-
corticoid

Ataraxoid*

prednisolone and hydroxyzine

provides the anti-rheumatic,
anti-inflammatory action of the most
effective steroid, STERANE,[®] complemented by
the superior central tranquilizing effects of
ATARAX.[®] Minimal disturbance of fluid and
electrolyte metabolism; no mental fogging
or major toxicity in ataractic action.

FOR UNMATCHED RESPONSE AND
MANAGEMENT IN RHEUMATOID ARTHRITIS...
AS IN OTHER COLLAGEN DISEASES, BRONCHIAL
ASTHMA, INFLAMMATORY DERMATOSES.

Supplied: Each green, scored
ATARAXOID Tablet contains 5 mg. prednisolone
(STERANE) and 10 mg. hydroxyzine hydro-
chloride (ATARAX). Bottles of 30 and 100

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Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, New York

Pfizer

*Trademark



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as a potent, specific anti-arthritic

established

by over 100 million patient days

substantiated

in more than 700 published reports

BUTAZOLIDIN[®]

(phenylbutazone GEIGY)

**potent, specific
anti-arthritic**

Based on an impressive background of achievement attained over a period of four years involving both long-term and short-term therapy in all the major forms of arthritis, BUTAZOLIDIN is recognized as one of the most effective anti-arthritic agents currently available.

***relieves pain
improves function
resolves inflammation***

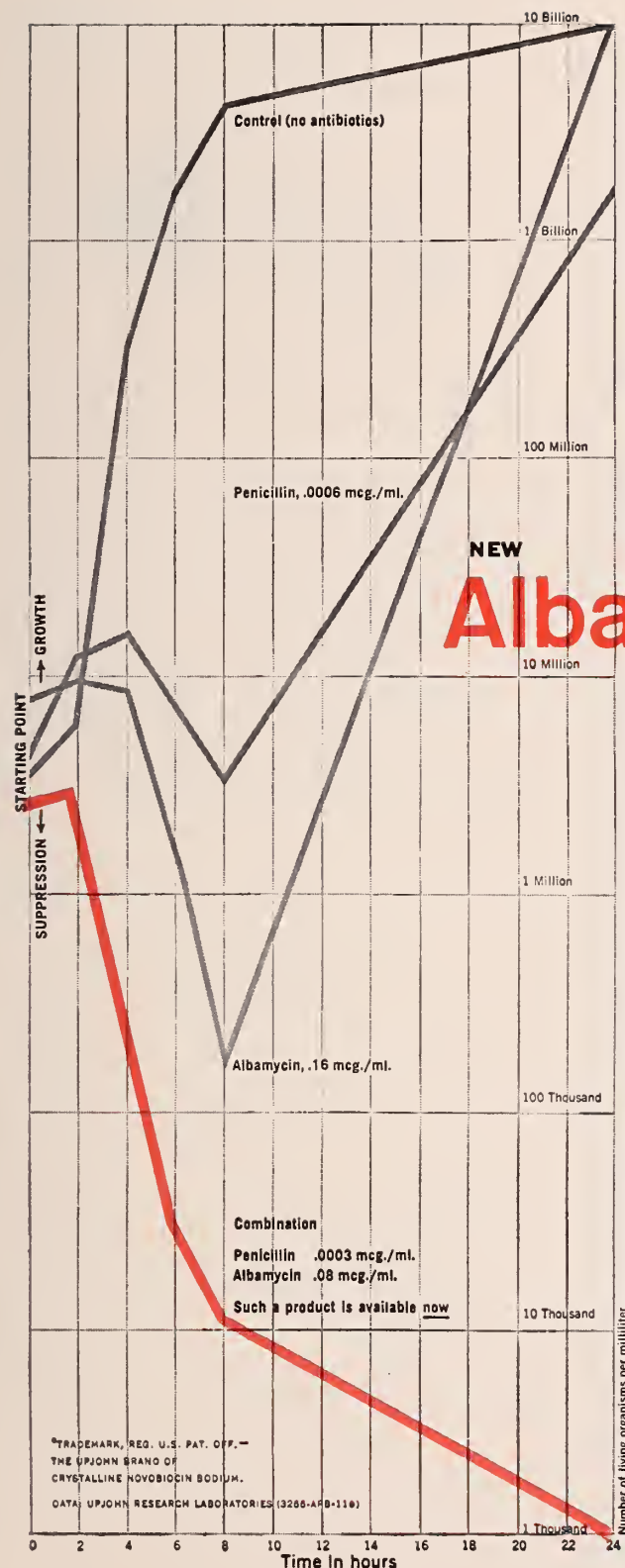
BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for literature before prescribing it.

GEIGY



GEIGY PHARMACEUTICALS, Division of Geigy Chemical Corporation, New York 13, N. Y.

72556



average dosage only t.i.d.

antibiotic synergism

The three gray lines of this graph show the growth rate of a penicillin-sensitive strain of *Staphylococcus* (*Micrococcus pyogenes*, var. *aureus*) under 3 conditions:

1. In the absence of antibiotics
2. In the presence of subinhibitory concentration of penicillin
3. In the presence of subinhibitory concentration of Albamycin*

Even half these subinhibitory concentrations of penicillin and Albamycin, when combined, (black line) produce a dramatic bactericidal effect.

Alba-Penicillin*

(Albamycin plus penicillin)

**Compare it with
the antibiotic you are
currently using:**

Range of effectiveness: Alba-Penicillin is effective against the organisms that cause the overwhelming majority of bacterial infections (*Staphylococci*, *Streptococci*, *Pneumococci*, *Proteus*).

Risk of resistance: Because in vitro tests show this combination is synergistic against even *Staphylococci* already resistant to all other antibiotics, the risk of resistance is minimized.

Risk of enterocolitis: Because it has little or no effect on the predominant Gram-negative intestinal bacteria, and is highly effective against *Staphylococci*, there is virtually no danger of enterocolitis due to alteration in intestinal flora, or of other side effects such as perianal pruritus.

Convenience: Alba-Penicillin is oral therapy, and the average adult dosage is only 1 to 2 capsules t.i.d., which eliminates middle-of-the-night medication.

It is available in bottles of 16 capsules. Each capsule contains 250 mg. Albamycin (as novobiocin sodium, crystalline) and 250,000 units penicillin G potassium.

Upjohn

THE UPJOHN COMPANY, KALAMAZOO, MICHIGAN

Digitalis

in its completeness



Each pill is
equivalent to
one USP Digitalis Unit

Physiologically Standardized
therefore always
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*Clinical samples sent to
physicians upon request.*

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• Insole extension and wedge at inner corner of heel where support is most needed.

★ The patented arch support construction is guaranteed not to break down.

• Innersoles guaranteed not to crack or collapse.

• Foot-so-Port lasts designed and the shoe construction engineered with orthopedic advice.

• Conductive Shoes for surgical and operating room personnel. N.B.F.U. specifications.

• We are also the manufacturer of the Gear-Action Shoe designed by noted orthopedic surgeon.

• We make more shoes for polio, club feet and disabled feet than any other shoe manufacturer.

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A Division of Musebeck Shoe Company

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This timely course covering all aspects of surgery of the hand is presented again by popular demand. Initial discussions of fundamental anatomy and function will be followed by sessions on the management of acute trauma and surgical diseases of the hand. All phases of reconstruction of skin, nerve, bone and tendon will be covered by movies, colored slides and patient demonstrations.

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natural, oral
estrogen*

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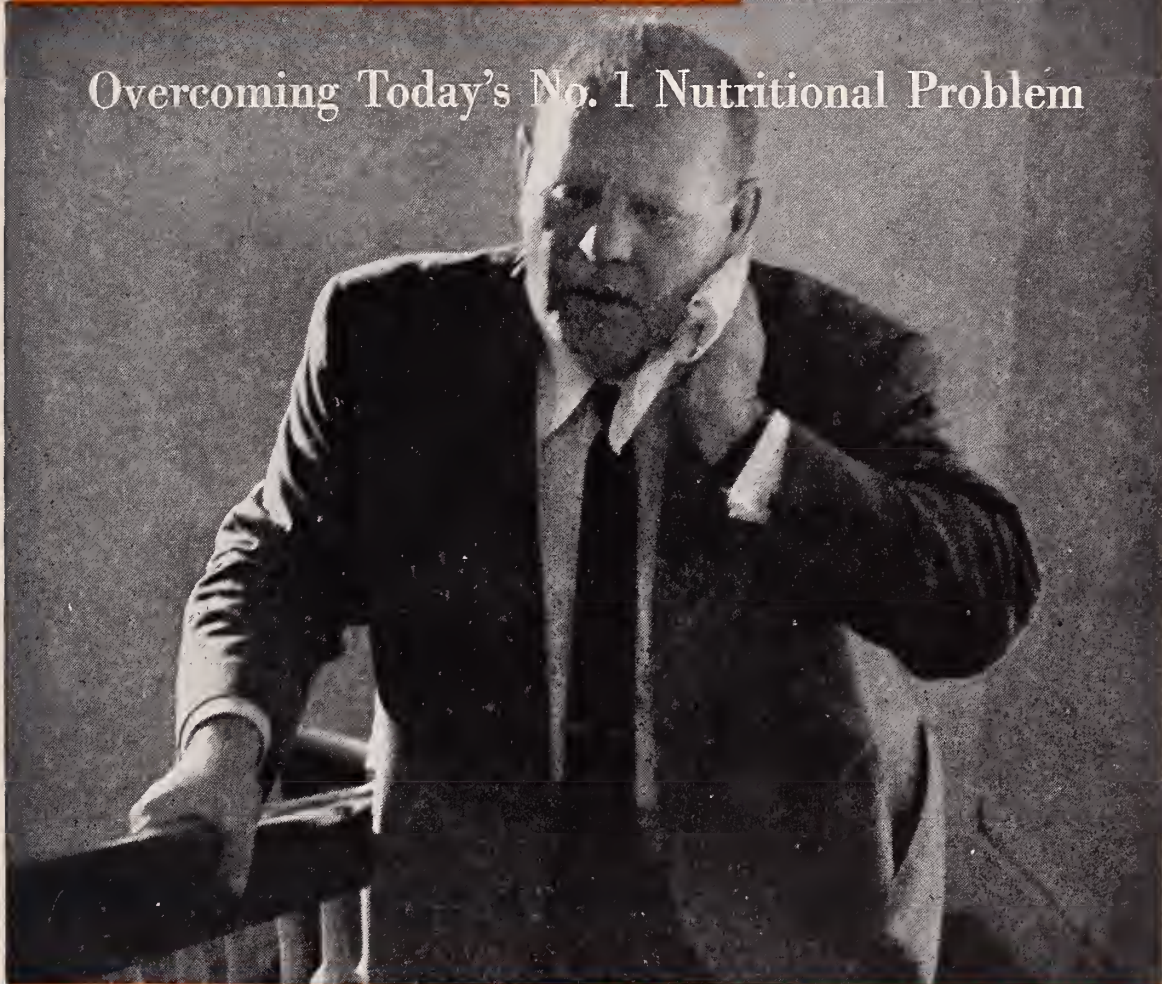
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Overcoming Today's No. 1 Nutritional Problem



Knox "Choice of Foods" Diet Can Help Your CARDIAC Patients Lose Weight Successfully



1. Color-coded diets of 1200, 1600 and 1800 calories are based on nutritionally-sound Food Exchanges.¹

2. Easy-to-use Food Exchanges (referred to in the Knox booklet as Choices) eliminate calorie counting by patient.

3. Diets promote accurate adjustment of caloric levels to the special needs of the patient yet allow each individual considerable latitude in the choice of foods.

4. More than six dozen appetizing, low-calorie recipes are presented on the last 14 pages of each diet booklet.

1. The Food Exchange Lists referred to are based on material in "Meal Planning with Exchange Lists" prepared by Committees of the American Diabetes Association, Inc., and The American Dietetic Association in cooperation with the Chronic Disease Program, Public Health Service, Department of Health, Education and Welfare.

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Your Name and Address



One DONNAGESIC Extentab gives 10 to 12 hours of steady, high-level codeine analgesia. Rebuilding of effective analgesia with repeated doses is avoided. Patient comfort is continuous.

There is more pain relief in DONNAGESIC Extentabs than in codeine alone — codeine analgesia is potentiated by the phenobarbital present. In addition, phenobarbital diminishes anxiety, lowering patient's reactivity to pain.

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DonnagesicTM Extentabs^{*}

extended action tablets of CODEINE with DONNATAL®

**once every 10-12 hours
and
for all codeine uses**

DONNAGESIC No. 1 (pink)



DONNAGESIC No. 2 (red)



CODEINE Phosphate	48.6 mg. (¾ gr.)	97.2 mg. (1½ gr.)
Hyoscyamine Sulfate	0.3111 mg.	0.3111 mg.
Atropine Sulfate	0.0582 mg.	0.0582 mg.
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Phenobarbital	48.6 mg. (¾ gr.)	48.6 mg. (¾ gr.)



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both mind
and
muscle

*for the average
patient in
everyday practice*

- well suited for prolonged therapy
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- no blood dyscrasias, liver toxicity, Parkinson-like syndrome or nasal stuffiness
 - chemically unrelated to chlorpromazine or reserpine
 - does not produce significant depression
- orally effective within 30 minutes for a period of 6 hours

Indications: anxiety and tension states, muscle spasm.

THE ORIGINAL MEPROBAMATE[®]
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Tranquilizer with muscle-relaxant action

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2-methyl-2-n-propyl-1,3-propanediol dicarbamate—U.S. Patent 2,724,720

SUPPLIED: 400 mg. scored tablets. Usual dose: 1 or 2 tablets t.i.d.

Literature and Samples Available on Request



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nostyn[®]

Ectylurea, AMES
(higher melting isomer of
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the power of gentleness

helps patients face everyday anxieties and tensions

*"...mild action promotes an over-all calmness..."**

New and Different • not a hypnotic-sedative—unrelated to any available chemopsychotherapeutic agent • no evidence of cumulation or habituation • does not cause gastric hyperacidity • unusually wide margin of safety—no significant side effects

Dosage: 150-300 mg. three or four times daily.

Supplied: 300 mg. scored tablets, bottles of 48.

*Ferguson, J. T.: J. Am. Geriatrics Soc. 4:1080, 1956.



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Rauwiloid[®]

A Better Antihypertensive

... because among all Rauwolfia preparations Rauwiloid (alseroxylon) is maximally effective and maximally safe
... because least dosage adjustment is necessary ...
because the incidence of depression is less ... because up to 80% of patients with mild labile hypertension and many with more severe forms respond to Rauwiloid alone.

A Better Tranquilizer, too

... because Rauwiloid's *nonsoporific* sedative action relieves anxiety in a long list of unrelated diseases not necessarily associated with hypertension ... without masking of symptoms ... without impairing intellectual or psychomotor efficiency.

Dosage: Simply two 2 mg. tablets at bedtime.
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Best first step when more potent drugs are needed

Rauwiloid is recognized as basal medication in all grades and types of hypertension. In combination with more potent agents it proves synergistic or potentiating, making smaller dosage effective and freer from side actions.

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In moderate to severe hypertension this single-tablet combination permits long-term therapy with dependably stable response. Each tablet contains 1 mg. Rauwiloid and 3 mg. Veriloid. Initial dose, 1 tablet t.i.d., p.c.

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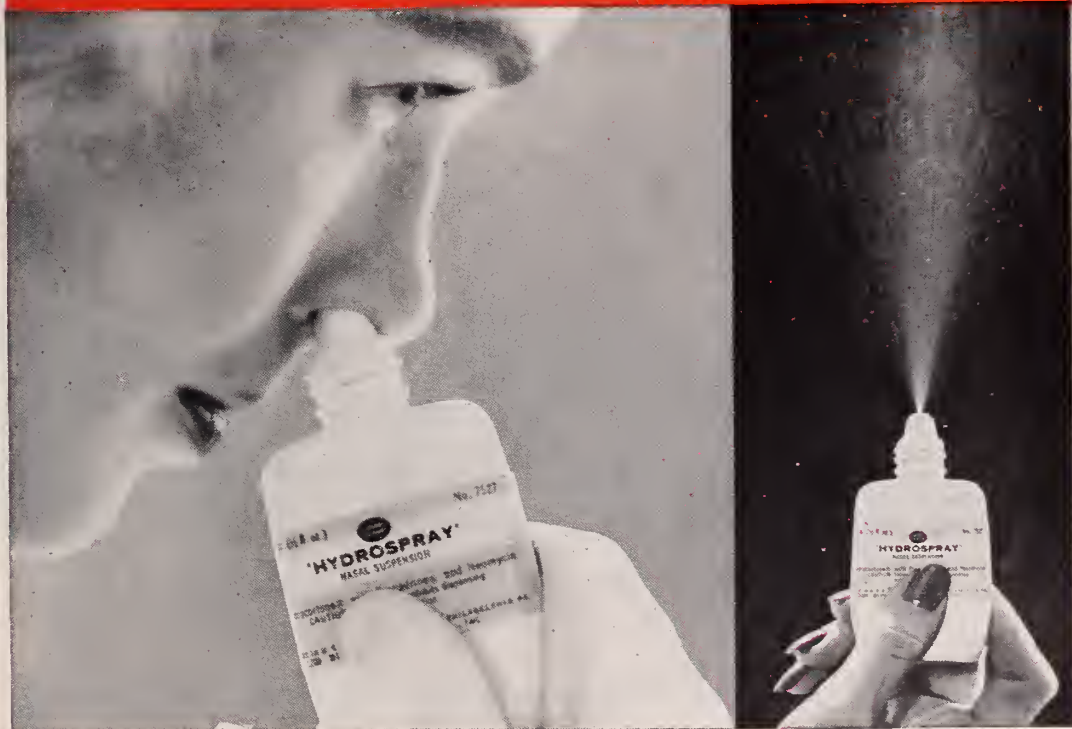
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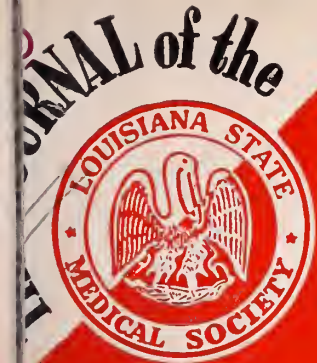
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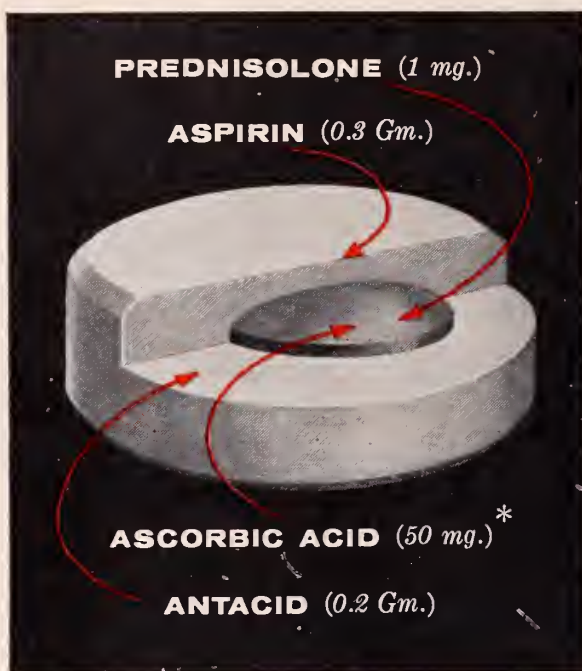
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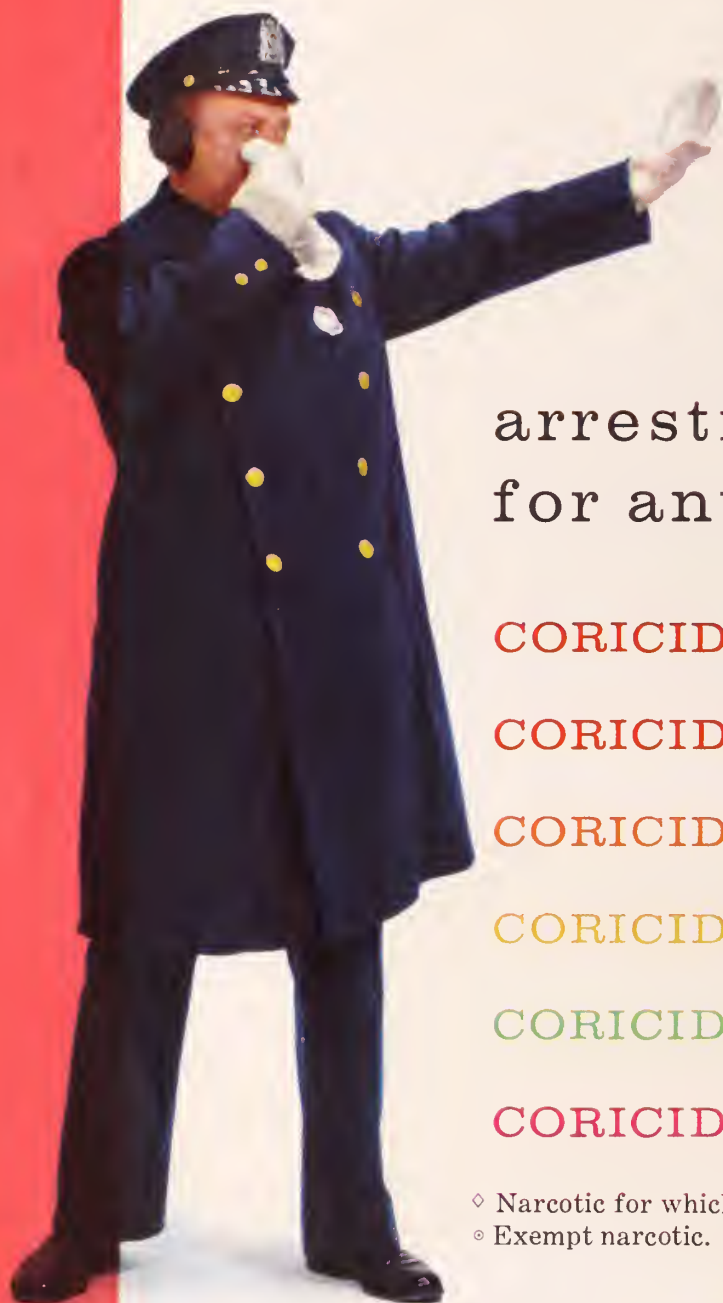
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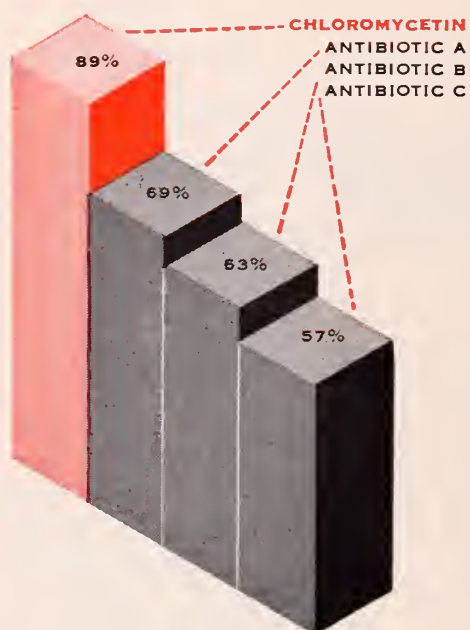
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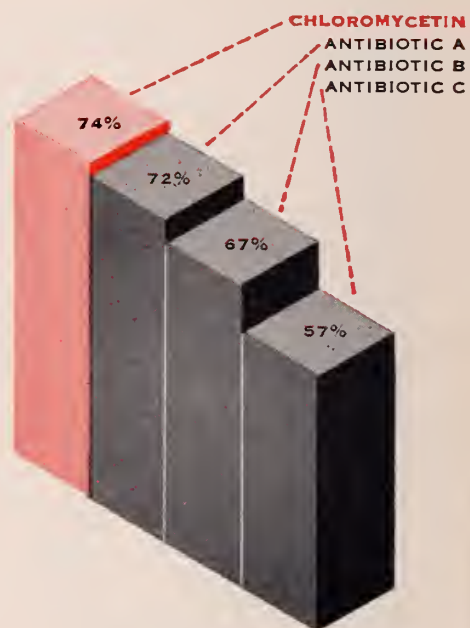
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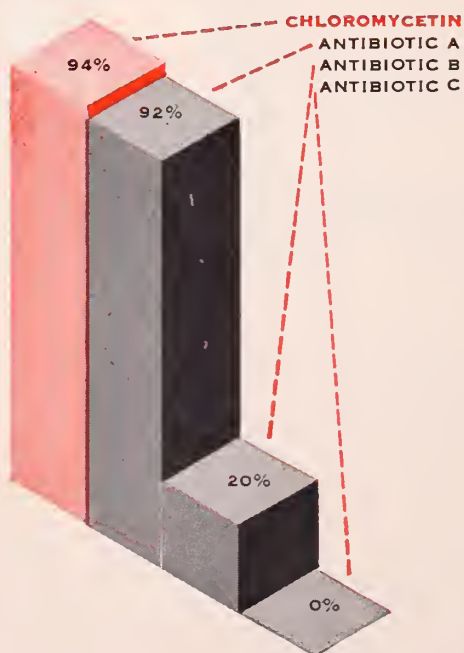
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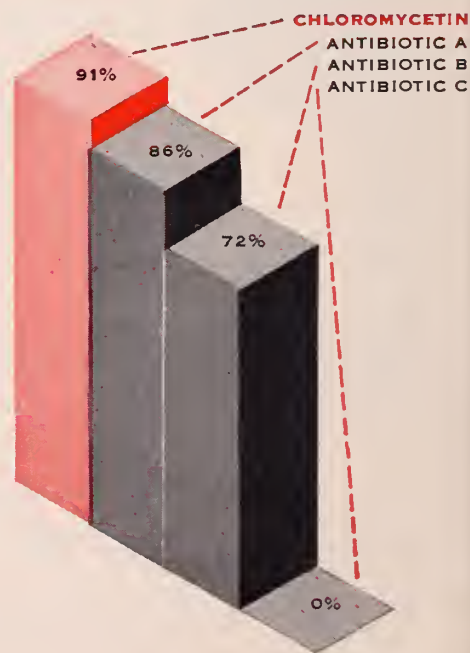
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This graph is adapted from Altemeier, Culbertson, Sherman, Cole, Elstun, & Fultz.¹



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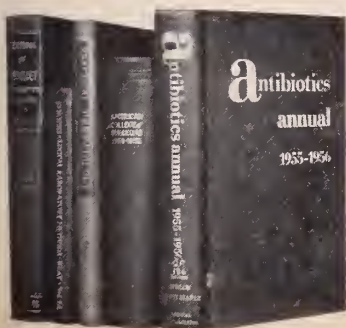
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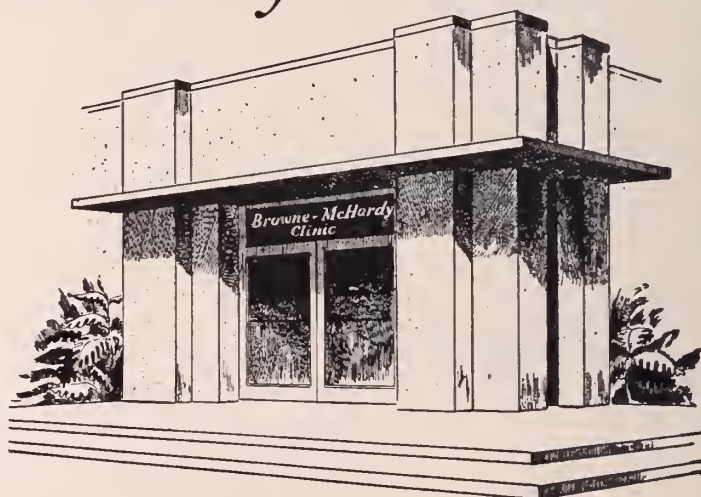
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1. Romansky, M.J., et al., Antibiotics Annual 1955-1956, p. 48,
2. Waddington, W. S., Maple, F. C., and Kirby, W. M. M., A.M.A. Archives of Internal Medicine, 1954, p. 556.

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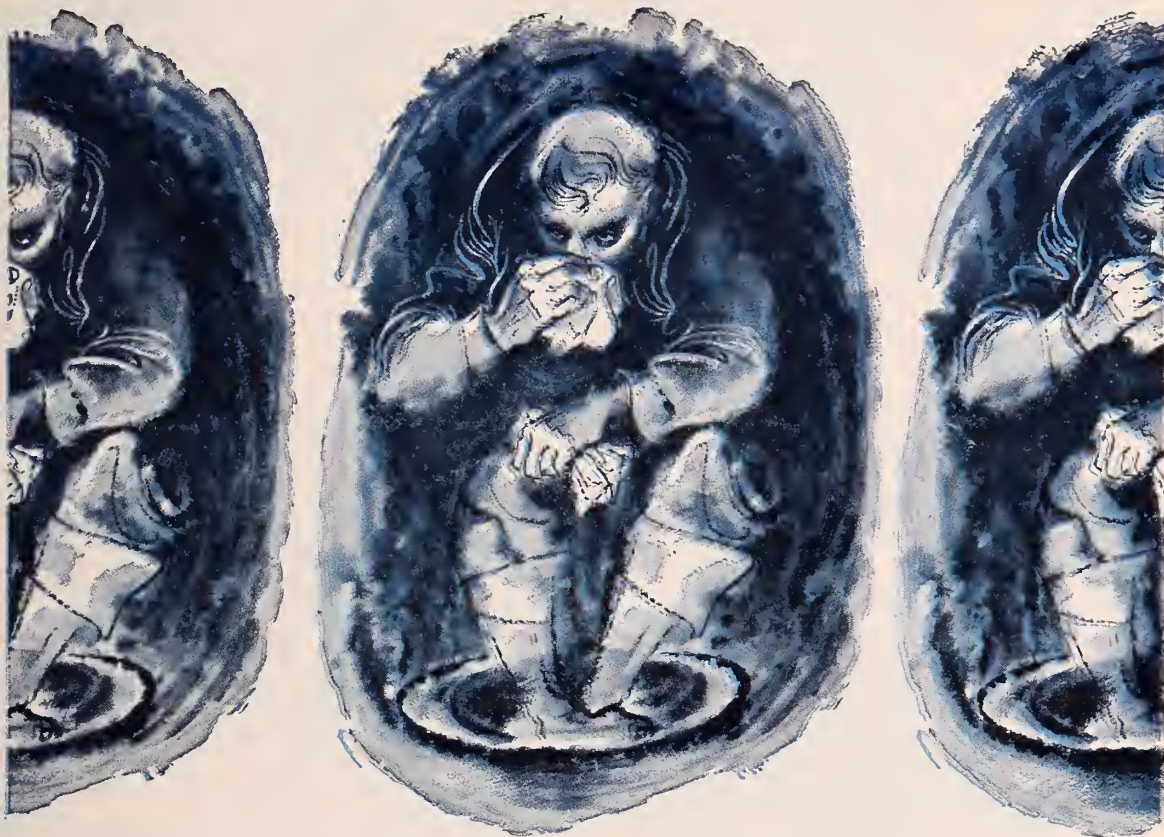
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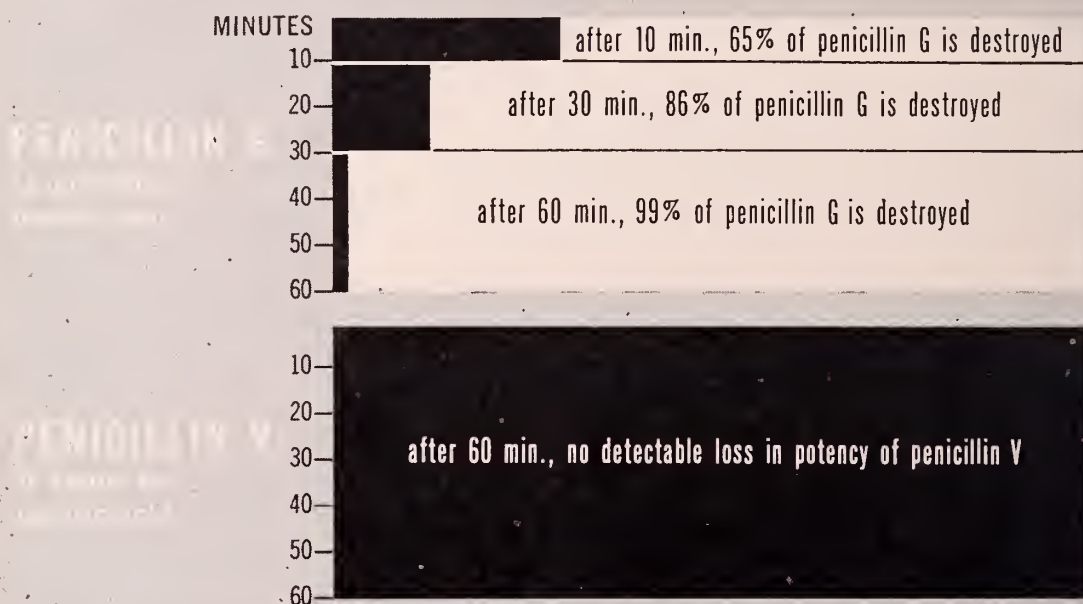
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THE POSITIVE APPROACH TO COMBATTING SOCIALISM *

LEONARD E. READ †
IRVINGTON-ON-HUDSON, N. Y.

The American people today are becoming more and more afraid of, and are running away from, their own revolution. The American Revolution, contrary to what many persons think, was not essentially a series of battles. The essence of the American Revolution was a revolutionary idea. It was a revolt from the old world notion of a sovereign state and a subjected people to a sovereign people and a servant state.

We are today running toward the very thing we originally ran away from. I would like to take a few moments to define, if I may, the thing we are now running toward.

It is a form of authoritarianism. It has many names. One of the names is socialism. Socialism can be simply defined as state or government ownership and control of the means of production, or it could be defined as the communizing of the product of all by force.

We had an instance of this in our beginning—on the occasion of the landing of our Pilgrim Fathers. It made no differ-

ence how much or how little any member of the Colony produced. That produce had to go into a common warehouse under authority, and the proceeds of the warehouse were doled out in accordance with the authority's idea of the need. In other words, they adopted, a practice which two centuries later was held up by Karl Marx as the ideal of the Communist Party—"from each according to his ability, to each according to his need."

There was good reason, a compelling reason, why our Pilgrim Fathers gave up that idea. The members of the colony were starving and dying. The warehouse ran out of provender. Governor Bradford in talking with the remaining members of the colony that third winter said, "Come next spring, we are going to try a new idea. Each of you is to have what you yourselves produce." Came spring and not only was Papa in the field, but Mama and the children were there also.

ROBIN HOOD EXAMINED

This thing we are running toward could be described as the exact opposite of the Judeo-Christian philosophy of Charity, a voluntary spontaneous act as distinguished from using force to collect from some and give to others. Another way is to think of it as political Robin Hoodism.

Robin Hood, a figment of fiction, always has been and remains popular. The reason for this popularity is that he robbed the rich to aid the poor. Now, if the rich came by their properties honestly, Robin was nothing but a vandal of the

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† President, Foundation for Economic Education, Inc.

first order, and if they came by their property dishonestly, Robin was nothing but a show-off, for had he been intelligently and truly interested in aiding those he purported to help, he would have used his great skills to have stopped the robbers in the first place.

Those are definitions of the things we are running toward.

So that we won't misunderstand one another at all, I will give you a few examples. As a matter of fact, if I were to explain the expenditures of the governments in this country—there are 120,000 units of government in America—at the rate of one million dollars per hour, which is considerably faster than I am accustomed to spending money, I would conclude this luncheon sometime in the year 2,000.

Let me give you just an example or two of taking from some and giving to others by force.

Our intergovernmental loan programs or give-away programs qualify for that—the Marshall Plan and Point IV. Such things as government housing, rent control, all wage and price controls, all subsidies, acreage allotments and parity prices, all grants or subventions by the Federal government to states, cities and communities, the protective tariff, and the progressive income tax, also qualify. You can go on and on. Those are some examples of this thing we are running toward.

THE ROOTS OF THE PROBLEM

Why are we doing it? I am not going to give what I think are all the reasons, but I would like to suggest to you some of the excuses that are given to me as to why friends of mine don't do anything about it.

There are those who say that this is a world trend, that there isn't anything you can do about it, that you have got to let it run its course, that you might as well relax and enjoy yourselves. There is another group that says, "But I am very busy. I do not have the time to do the study, the reading, the meditation required

to qualify me as an expert in this field," and there is the third group who say, "But there isn't anything you can do about it as an individual."

I should like to comment on those in reverse order, and reply to the excuse that there is nothing you can do about it as an individual by saying there is nothing at all that you can do about it *except* as an individual.

To the person who says that he is too busy to give time to study, reading and meditation on this problem, I would only ask that he state his excuse accurately and put it this way: I give reading, study and meditation on this general problem a low priority. I give a higher priority to my business, to my bridge, to my golf, to a thousand other things. A person has just as much time to give to this as he wills to give to it.

To the person who says that this is historically inevitable, that there isn't anything we can do, that we might as well let it run its course, I would say, "Obviously I don't believe that or it would be absurd for me to be in this work."

I have, however, tried to find instances in history where a country has been on this type of toboggan and reversed itself. It is pretty discouraging. I found one example in France during the reign of Louis XVI.

Louis XVI appointed Turgot as his finance minister, and free enterprise was restored almost overnight because Turgot removed the restrictions on trade and production and commerce. He kicked out the queen and her court, which were largely responsible for the big budget, but the queen and her court then went to work on Turgot politically and had him out of office in about eighteen months, so that was not a significant instance.

The only important one I discovered took place in England following the Napoleonic Wars. England was a small country, perhaps eight or nine million souls. Her economy was extremely simple as compared to ours today, but England's debt at the time certainly was greater in

relation to her resources than ours. Restrictions on exchanges of goods and services were so great that, had it not been for the smugglers — the law breakers, many people would have gone hungry. Added up, that is quite a mess.

Something did happen. What happened came about primarily by reason of the work of two brilliant men, John Bright and Richard Cobden, men who understood and were capable of explaining the philosophies that had earlier been laid down by John Stuart Mill, Ricardo, John Locke, Adam Smith and others. They went all about England writing and preaching about the merits of freedom of trade.

Members of Parliament were concerned about the difficulties in the country. They listened to these men, and there began the greatest reform movement in all British history, the repeal of restrictive laws—the Poor Laws, the Corn Laws and other things of that sort. At the time England fortunately had a Queen—Victoria—who would rather sit in the corner and knit than objectively rule Englishmen, and these Englishmen roamed all over the world, and built Empire, progress, and prosperity—in fact built quite a nation, a trend in development that went on until about the beginning of World War I when the disease set in again.

Now, I think at this point it is necessary that we take a look at this disease, the one we are running toward, or getting ourselves into again, the one that England went into again about the beginning of World War I.

This disease has many popular names, but they are not too descriptive. I have used a couple of them — Socialism and Communism, but other names are Fabianism, Naziism, Fascism, the welfare state, planned economy, state interventionism, the New Deal, the Fair Deal and I have some private names I might add.

If you will take a look at any one of these so-called progressive ideologies, you will see that each one had a characteristic common to all the rest, and it is this common characteristic that is the cell in our

social cancer which is the essence of the disease. It is in the form of a belief, a rapidly growing belief. Here is what it is: a rapidly growing belief in the use of organized police force, namely government, as a means to direct, control and own the creative activities of citizens within a society.

The American revolutionary idea did not have government in that function. The function of government according to the American revolutionary idea was to do for all of us that which we had a moral right to do for ourselves, and the only thing we have a moral right to do for ourselves against others is to protect ourselves against the aggression of others, in other words, to defend our own life and livelihood. We set up the agency of government for the purpose of being our servant, protecting all of us against the violence, fraud, misrepresentations or predatory practices of any one in society who might so indulge. In other words, government was used to inhibit the destructive activities of man. The creative activities were left to citizens. But government is being more and more used as a means to direct and control the creative activities of citizens.

Let me illustrate. I am so old that I can remember when, if we wanted a house or housing, we relied upon men in private enterprise. First, we relied upon the person who wanted a house, which then seemed like a good notion; two, upon the person who wanted to construct it; and three, upon the person who wanted to loan the money for the tools, labor and money to build it. Under that system we built more square feet of housing per person than ever existed in any country on the face of the earth, in all history. Yet, in spite of that remarkable accomplishment, more and more persons are believing the only way we can have adequate housing is by using the agencies of force to take from you, and you, to give to the governmental authority's idea of the needy. In other words, here we are right back where we were in the first

place, the application of the Marxian ideal —*from* each according to his ability, *to* each according to his need, and by force of government.

It follows that, as this belief in the use of force as a means of getting things done increases, there is a corresponding and diminishing faith in free men to get things done. As the one grows, the other diminishes, obviously.

If that reasoning be sound, and I see no reason why it isn't, the solution of our problem has to take a positive form, namely, a restoration of a faith in free men.

Now, that is something much easier to admonish than to accomplish. Let me give you an example of what I mean. If I were to go around Chicago or any of your communities today and ask most of the citizens should the government deliver the mails, I am quite sure every one would say, "Yes." The reason they would say, "Yes," is that the government has preempted that activity, has had a monopoly of it for so many decades that all the persons who are entrepreneurs have given up any thought as to how they would do it if it were a private enterprise opportunity.

I did a little research not long ago and discovered we deliver more pounds of milk every morning than mail. I next made a startling discovery—that milk is more perishable than a love letter or a catalog. Third, I discovered they deliver the milk more promptly, cheaply and efficiently than mail.

I asked myself, "Why couldn't private enterprise deliver mail? We handle freight which is heavier." But, no, man has lost faith in himself to do this sort of thing.

Let me give you a hypothetical example that will perhaps illustrate this point even better. Let's assume that 180 years ago, the time we began this political establishment of ours, the Federal government had issued a decree to the effect that all boys and girls in America were to be provided with free shoes and stockings from the time they were born until they became adults, that the practice of the govern-

ment being responsible for shoes and stockings had been going on for these 180 years, and a person like Read comes along and says, "I don't believe that shoes and stockings should be the responsibility of the Federal government. I think that ought to be a family responsibility."

I can assure you that, had that been going on and had I said such a thing, most persons would respond "But Read, you would let the poor go unshod." In this instance where we have not done it, I am able to point out that in the countries where we are most free and the shoes and stockings for children have been a family responsibility, they are better shod than in the countries where they have been less free and shoes and stockings have been a government responsibility.

FAITH IN FREE MEN

This faith in free men is a very interesting thing. I am going to tell you what mine is. It is an extraordinarily radical idea, radical in the sense that very few persons share it.

I am going to tell it to you in one simple sentence. So hang on to your seats because it is shocking. *I actually believe that you are better able to control your creative actions than I am able to control your creative actions.*

Sometimes when I am explaining this to my collectivist adversaries, I put it this way. No person has a moral right to control another person beyond the defense of his own life and livelihood. If we were to assume that the persons in this room constituted the society of America, I could get every one here to agree there isn't anyone among us who has a moral right of control over anybody else beyond the defense of his or her own life and livelihood.

Well then, it is absurd, isn't it, to think that we could ourselves create an agency that has rights superior to those of us who organize it. With that kind of reasoning, I can derive my idea of what should be the scope of government. It should be used to do for all of us equally that which we as persons have a moral

right to do for ourselves—defend our own life and livelihood. There is a good reason for government to perform that function. But once government goes beyond that limit, once government assumes or has delegated to it rights which we ourselves do not possess, or government arrogates to itself controls which we have no moral right to exercise, then that government is hanging on a thesis as untenable as the divine right of kings theory. If it does not get its rights from those of us who organize it, from where do these rights come?

It is one thing to have this sort of a faith in free man. It is another thing to give it to those who have no such faith. I will concede this is a problem of influencing other persons, but I think we need to understand the nature of influence lest we do more damage than good.

There is the problem of influencing persons to buy corn flakes, automobiles, watches, soap and so forth, things that satisfy desires of the flesh. I am not interested in that today. I am interested in influence as it relates to the communication of ideas, ideas being accomplishments of the intellect.

INFLUENCES DEFINED

In this area there are really two types of influence. One is the rational, and the other is the nonrational. The nonrational devices are very influential for our collectivistic adversaries, those who would destroy a free society. Destruction is awfully easy. It is a different technique than creation. For instance, it took all the history of mankind in the fields of engineering, construction and architecture to build a shanty like we are in here today. Yet an idiot could destroy it in a moment.

An example of a nonrational device is a slogan. The slogan: "Kill all the Jews," effectively influenced a lot of people in Germany to follow a madman. Clever cliches and phrases fall in the category of the nonrational. "What would you do, let them starve?" Or, "Human rights are above property rights." Those are catch phrases and cliches that have effectively

influenced millions of Americans to elevate charlatans into public office.

The best example of nonrational device that I can think of is a man with a Messianic voice who can stand before thousands and whip them into a maniacal frenzy, the frenzied crowd being extremely influential in destruction. But can you imagine the frenzied crowd creating, inventing or discovering? I could not. What I am trying to suggest is that our task is in the creative not the destructive area. By creative action I mean the advancement of understanding. Of what? Of our own philosophy, the one that is the opposite of socialism.

One of the reasons that the belief in force or socialism is growing is that there is so little standing against it. By that I mean there are very few of us in this country today who have an adequate understanding of our own philosophy and a capacity to explain it with clarity. I assume that every one of you in this room has a wide acquaintanceship. Yet I would be reasonably safe in saying that there isn't one of you who will claim that you personally know five persons whom you consider to be skilled, accomplished expositors of the free market, private property, or limited government philosophy.

The reason we are losing this battle is because we have such a lack of understanding of our own philosophy. There are a great number of us who can damn socialism and inveigh against communism. We can sputter, but we cannot explain. The problem then is one of learning, learning our own philosophy.

There are a couple of things I want to say about the learning process. The learning process presupposes two things. Number one, a person who wishes to learn a subject, and number two, a source from which the learning may be drawn.

Now, I will concede that we need literally tens of thousands of persons in this country who want to know the free market, private property, limited government philosophy because, if they do not understand it and know how to explain it, they

won't, and all the speech making and all the pamphleteering and all the babbling will have no effect at all.

They must want to know.

THE SOURCE OF UNDERSTANDING

What is it then that can create this needed wide-spread desire to learn. It is the second part of the equation, the source of understanding. Let me illustrate.

There was no desire fifteen years ago to understand nuclear fission, but the moment that one man found out how to release atomic energy, the moment that idea existed in the brain of a man and he communicated it to all, there was automatically created a desire to learn on the part of tens of thousands of persons, persons from all over the earth who had an aptitude for that particular subject. In other words, it was the source of the understanding that created the desire to know.

Now we are getting down to the nub of the problem of how you develop this source of understanding. You see, there are two ways to go about it. One is called "selling the masses technique," or as they put it sometimes "selling the man in the street."

The presumption in this line of reasoning is that everybody else except myself is ignorant, and all I have got to do is get somebody else to know what I know, and ipso facto, the millenium.

The other day in response to hearing this selling-the-man-in-the-street argument, which I have heard so many times, I rushed out into the street to see what kind of educational job it was, and who do you think I found in the street? It was Read.

I reject this selling the masses or the man-in-the-street technique, and commend the improvement-of-self-method or developing the source of understanding on the other hand.

I belong to a golf club composed of 250 dubs among which I am a distinguished incompetent. Now, let us assume for the sake of this golf analogue that my object is to get all of the members of St. An-

draws to become scratch golfers. I guess everybody in the room knows what a scratch golfer is. For rating purposes, he's a good as one can get.

I use the selling-the-masses technique and admonish all my colleagues to become scratch golfers, I, the dub, who does not know how to be a scratch golfer myself. I submit that that kind of action on my part would be repellent. If I persisted in it long enough, they would finally ask me to resign from St. Andrews.

Now, let's consider the way I am commending we go about the problem of advancing our philosophy. I go to work on the one person on earth over whom I have some control in the creative sense, namely, Leonard Read. I try desperately to become a scratch golfer myself. Let's make the extremely radical assumption I succeed.

I submit that this sort of action on my part would be attractive, that most of my colleagues would come to me and say, "Read, if you can do it, maybe I can do it, but won't you please teach me?" In other words, I would have established myself as a teacher, as a source of understanding, as the one from whom learning could be drawn.

What we need to solve our problems are numerous persons who can qualify as teachers of the free market, private property, limited government philosophy.

There isn't anything that you can do to help out on this except that you yourself try to so qualify. You must remember that the teacher is never self-designated. The teacher in every instance is designated by the student. It is you who decide what you are going to learn from another, or to put it in a more obvious way: It is always the person with the receiving set who does the tuning in; it is never the broadcaster!

SOCIALISM AND MEDICINE

Before I tell a couple of stories to show how this approach works, I wish to say just a word about socialism as it relates to the medical profession because I believe that you are interested in that.

What is happening to you is nothing more nor less than a manifestation of the general socialistic problem. You can put up all the fight you please against socialized medicine, but if the belief in force continues to grow, your fight will be to no avail.

You must approach this problem as your husbands approach diseases. They approach them systemically, and that is the way you must approach this.

You should actually be more interested in scrapping socialism when it rears its ugly head in areas other than your own because there you can be more effective than you can when your own ox is being gored. I recall a quotation made by Milton Mayer, who wrote a little book entitled "These Few." It was an essay addressed to the Jews and their minority problem, and he gave them some very good advice. He ended with this rather remarkable line: "If these minority groups would save their own skins and their own souls, they would first fight for the rights of all men; second, for the rights of others than their own and last, if at all, for their own." The doctors, the power and light people, the housing people, in fact everybody in private enterprise could well take that admonition to heart.

I will conclude with two stories that will illustrate how this developing the source of understanding works.

The first story began two years ago last month. I received a letter from a staff member of the *Reader's Digest* which said: "We are going to reprint in a future issue of the *Reader's Digest* a clipping which you have published entitled, 'If Men Were Free To Try' by John Sparks. We will send Mr. Sparks \$200 and the Foundation \$200." That was all very lovely for we ask people to reprint our material even without asking permission because we are interested in the dissemination of libertarian ideas.

I had a date two weeks later with Mr. Wallace, the editor and publisher of *Reader's Digest*. He said, "Read, I am delighted with this piece that we are going

to reprint in the July issue of the *Reader's Digest*. It is the best thing of its kind I have seen. It is the kind of stuff we want more of." Then he handed me two checks, bottom side up. I thought they were the two \$200 checks, but I am an extraordinarily curious person so I peeked, and the one made out to John Sparks wasn't for \$200; it was for \$500. And the one made out to the Foundation wasn't for \$200; it was for \$2,000.

I said, "Mr. Wallace, maybe you would be interested in learning how this piece which you admire so much came into being."

I told him about going to Canton, Ohio in 1946, the year we started the Foundation, and delivering an address to an annual banquet of home builders. There were 300 men there that night. When the affair was over at 9:30, two young architects came up and introduced themselves to me as Bill Dicks and Dick Lawrence. They asked me if I had any more time, so we went over to the Canton Club and talked. The burden of their argument was the same as I hear on all sides. "Read, we agree with your free market, private property, limited government philosophy, but what concerns us is what are we going to do about all these people who don't understand. How are we going to get it into their heads? How are we going to organize? How will we get action?"

PRESENTING THE CHALLENGE

I said, "Bill and Dick, if you are seeking my counsel on this problem, I would have you forget everybody else on the face of this earth. I have another kind of a project for you to take on.

"I would like to see if you two can become skilled, accomplished expositors of our philosophy yourselves. If you succeed, I can make you two promises. Then, and, only then, will you become influential in stopping this trend to socialism in America. And, second, your very accomplishment will attract others to you by reason of what you have learned."

I reported to Mr. Wallace that Bill and Dick took my counsel and went to work

on themselves, on improving their own understanding. You could go over this country with a fine-toothed comb, and, with difficulty, could you find any pair of young men as skilled and accomplished in our philosophy as Bill and Dick.

The second part of the promise came true. People in Canton learned of their understanding. Discussion groups began to form around them, and today there are not less than 100 young men and women in that area who are reasonably accomplished in this philosophy.

"Mr. Wallace," I continued, "the first person among these 100 attracted to Bill and Dick was our friend, John Sparks, the one who wrote this piece. In these eight years he has come so far and can write a piece of such fine exposition that you, sir, stand in front of me and of your own free will—I didn't nudge you—give me \$2,500 and insist upon giving what he wrote 15 million duplication in your *Reader's Digest*."

The other story is a bit different but the same in principle.

About four years ago I received a phone call from a businessman in New York. He said, "I have heard about the Foundation. Won't you come down and tell me about it?"

I lunched with Mr. Jones and told him much of what I have told you. I told him how we brought together statisticians, economists, researchers, philosophers, men and women devoted to the libertarian philosophy, all of us conceding we don't know all the answers, all of us specializing in trying to understand it better, writing our findings in books, pamphlets, clippings and journals and making our works available to every one who wants them. (Parenthetically, nothing would make me happier than if every one in this room would want to receive our material. All you have to do is to ask for it, and it is yours. If you don't drop me a note and say you want it, tell Miss Wolfe. I am sure she will see that we get the message.)

Anyway I explained to Mr. Jones that

we sent this material to those who asked for it, and he said, "How many asked for it? How many are on your mailing list, Read?"

The answer then was about 22,000. "Ah," he said, "that is nothing in a country as big as this. That is no good." I told him about the distribution of one of our clippings which we circulate the same as books, pamphlets or journals. "But," I said, "That 22,000 wasn't all there was to the dissemination, Mr. Jones." "What else was there?" asked he. I said, "Those persons in turn obtained from us 250,000 copies and distributed them in their own circles of influence."

Then, he said, "A quarter of a million isn't anything in a country with 165 million persons."

"Well, Mr. Jones," I answered, "There was a third stage of dissemination." "What is that?" asked he.

I said, "The *Saturday Evening Post* with a circulation of four million used it as a lead editorial. The *Reader's Digest* reprinted it in the domestic and seven foreign editions, a circulation totaling 13,700,000, as did literally hundreds of newspapers, house organs and employee journals. Mr. Jones, it probably reached duplication of over 100,000,000."

As his interest became obvious I added, "But, there was one more stage of the dissemination. It's when the person who reads an item in the *Post* or *Digest* takes the idea and uses it as his own, in his own speech, his own writing." By this time Mr. Jones was getting excited about the kind of an idea that had this take-off power.

I told him about the clipping of ours entitled, "A Lesson In Socialism," which as I explained was distributed just the same as our other material.

A FINE EXAMPLE

It was about the high school teacher of economics and history explaining the meaning of socialism to his class. He said to his class, "Mary, you got a grade of 95, and Jane, you got a grade of 55. I am going to take 20 points from Mary,

and I am going to give them to Jane. That will give you each 75, adequate for passing. That will be applying the socialistic principle 'from each according to his ability, to each according to his need.' Now let's see how this will work. You won't do any work, Mary, because you have had your incentive removed. That is a serious operation. You, Jane, won't do any work because you are getting something for nothing. Therefore, we have a class that will no longer work. You can't live unless you work and produce. So, in order to get production or work, we will have to bring in somebody with a whip or gun to induce production. Thus, this socialistic principle is the authorship of authoritarianism."

Said Jones, "Why, Read, I was at the Rotary Club in Philadelphia last week. The speaker used that as his own idea."

"Thank you very much Mr. Jones, You have made my point."

Ladies and Gentlemen, I would like to thank you for I believe I have made my point.

POISONING APT TO BE ENCOUNTERED IN GENERAL PRACTICE *

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NEW ORLEANS

This age of chemistry and technology has greatly lightened the chores of ordinary living. The laboratory has given birth to synthetic detergents, cleaners, medicines and insecticides. Most of these are marketed under trademarked or patented names. These products when used for the purpose for which they were intended and used in accordance with the

instructions given by the manufacturer cause no difficulty. However, ingestion and improper usage can lead to illness. At times the cause of the illness may not immediately be apparent. Poisoning can occur in many ways. The most important of these are the accidental, statistically, the largest group. Suicidal intent is also prominent. Less commonly are seen self-treatment, homicidal and iatrogenic (physician induced) causes.

The availability of agents is multitudinous. The majority of offending substances will fall into the following categories: insecticides, rodenticides, detergents or cleaners, disinfectants, prescriptions, patent medicines, and miscellaneous. Chemically or toxicologically these fall into the following classes: simple inorganics, heavy metals, alkaloids, hydrocarbon solvents, chlorinated hydrocarbons, organic phosphates, barbiturates and sedatives, dinitrophenols, salicylates, and carbon monoxide. (See table 1.)

TABLE 1
POISONS DISCUSSED IN THIS PAPER

- | |
|----------------------------------|
| 1. Simple Inorganics |
| Fluoride |
| Fluroacetate |
| Phosphorus |
| Chlorine |
| Anhydrous Ammonia |
| 2. Heavy Metals |
| Arsenic |
| Mercury |
| Lead |
| 3. Alkaloids |
| Nicotine |
| Strychnine |
| 4. Hydrocarbon Solvents |
| Kerosene |
| Gasoline |
| 5. Chlorinated Hydrocarbons |
| Carbon tetrachloride |
| Chlorinated organic insecticides |
| 6. Dinitrophenols |
| 7. Organic Phosphorus Compounds |
| 8. Salicylates |

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All of these compounds require some consideration as the signs and symptoms differ and the therapy varies. The mode of action and the therapy of alcohol, opiate, barbiturate, and carbon monoxide intoxication is well understood. We shall

pass over these compounds even though statistically they represent a large majority of the cases which are seen. The less understood varieties of poisoning will be detailed in this paper.

SIMPLE INORGANICS

Phosphorus, either white or yellow, is found in many rat and some roach poisons. Most of these preparations will smoke when exposed to air and a strong odor of garlic is apparent. This odor may be detected in the acutely poisoned victim. The symptoms of acute poisoning occur in two phases: (1) Cardiac and central nervous system collapse are apparent within hours and, (2) the gastrointestinal phase occurs in a day. The stools may smoke and appear phosphorescent.

Treatment is gavage with 0.5 to 1.0 per cent solution of potassium permanganate. Remove after a few minutes and instil magnesium sulfate to empty the bowel. Avoid oil and fat in any form as these will increase the absorption of phosphorus.

If the patient survives the gastrointestinal phase which may last four to fourteen days, he will pass into the subacute phase or the phase of liver failure. This is due to subacute yellow atrophy of the liver. Toxic neuritis may also appear. These manifestations are treated symptomatically, handling the liver failure as in any case of acute yellow atrophy. In fact, during the entire gastrointestinal phase the patient should have the same therapy as usually given for infectious hepatitis: diet, restricted activity, vitamins, etc.

For completeness sake, chronic phosphorus poisoning should be mentioned. This is now rare, and occurred principally in the match industry, when matches used to contain white phosphorus. The outstanding feature is a bone necrosis, which in match workers occurred in the jaw, the so-called "phossy jaw." In addition, these patients had diarrhea, anemia and jaundice. The treatment is entirely symptomatic.

Fluorides are found in dusts and sprays for the garden as well as some household insecticides. Poisoning usually occurs with

the mistaking of sodium fluoride for baking powder, etc. The sodium fluoride in the stomach is converted to hydrofluoric acid. As this is used to etch glass, one can imagine the symptoms. In addition to being a strong corrosive, the fluoride ion poisons metabolic and enzymatic processes. The direct action of the fluoride in the stomach causes abdominal pain, nausea, vomiting and diarrhea. Later, the effects of absorption occur: seizures, dyspnea, and myocardial weakness. Death is from shock in forty-five minutes to about four hours. Treatment is gavage with magnesia in milk. This helps to bind the fluoride ion and remove it. Symptomatic treatment is instituted for the other symptoms. Saline is given as the "loading" of another halogen ion promotes the excretion of the first. This is true in bromide intoxication also. If the patient survives the period of shock, renal manifestations occur and these must be treated expectantly. The mode of action of this substance is an interference with acetate metabolism in muscle, cardiac muscle and nervous system.

Sodium fluoroacetate, or 1080, is similar to fluoride poisoning except that much smaller amounts are toxic. This compound is used as an insecticide and poisoning can occur orally or by inhalation in spraying. The symptoms occur rapidly and consist of nausea, mental depression, epileptiform seizures, extreme depression with pulsus alternans, and death ensues from ventricular fibrillation or cardiac arrest. The total duration of symptoms may be only one half to two hours. The treatment is not specific and consists of gavage with the instillation of magnesium sulfate.

Gases like *chlorine* and *anhydrous ammonia* are powerful corrosives. The former is changed into hydrochloric acid when it comes in contact with water, i.e. a moist mucous membrane, and the latter is changed into ammonium hydroxide. These substances can give severe conjunctival burns and cause an intense irritation to the mouth, nose, pharynx, and respiratory system. In time, a pseudomembrane

ous appearance may result. All efforts are concentrated in keeping an open airway and tiding the lungs over the insult. The corneal and conjunctival manifestations require the usual forms of therapy.

HEAVY METALS

Arsenic intoxication occurs from accidental, suicidal, homicidal, and iatrogenic (Fowler's solution) means. Arsenic is a favorite component of ant poisons and dusts of various sorts used in the garden. The acute form of poisoning is divided into three types: Paralytic — death within twenty-four hours. This may occur quite rapidly by complete nervous system paralysis. The gastrointestinal form presents as cramping abdominal pain, diarrhea, cholera-like stools. This is the most usual form and is the one usually described in mystery novels. The third or liver form is acute yellow atrophy within two to three days. Treatment is gavage with tincture of ferric chloride a half ounce in a glass of water. Saturate with magnesia. Then administer British anti-lewisite (BAL) intramuscularly in a dose of 5 mgm. per kilogram of body weight every four hours until the symptoms are controlled.

A subacute phase of poisoning exists. This lasts weeks to months and consists of acute yellow atrophy of the liver, nephrosis, and dermatitis. This may pass into the chronic phase and present as neuritis, chronic gastroenteritis, Raynaud's syndrome, and arsenical keratoses. A urine level above 2 mg. per liter is indicative of arsenic intoxication.

Mercury is not a common cause of acute poisoning except as a suicide. Occasionally, calomel—harmless mercurous chloride—is converted into the toxic mercuric chloride and poisoning ensues. This may happen before it is taken or after it is in the gastrointestinal tract.

In the acute gastrointestinal tract poisoning gastrointestinal symptoms occur within thirty minutes. There is suppression of kidney function. Mercury is excreted mainly by the colon and kidney so later manifestations are seen in these or-

gans. Treatment is by gavage with the white of an egg and BAL. Chronic poisoning in the felt hat industry gave rise to the term "mad as a hatter". A gum line is rare, but commonly there are tremors and paralyses. A lateral sclerosis-like syndrome has been reported occurring in dentists from the handling of mercury in making amalgam for fillings. A urine level above 0.3 mgm. per liter is thought to be significant. Treatment is with BAL. However, this substance is not as efficacious with this heavy metal as with arsenic.

Probably the most interesting of the heavy metals is *lead*. This metal is found in many different situations. Children with pica may get lead from plaster or paint; painters, from white lead. Metal workers, welders, etc. can volatilize enough metal to get acute poisoning. In the shipyard industry acute lead poisoning is called the "Plummies", which is a good layman's translation of plumbism. Occasionally suicide and abortion are tried with lead compounds. Acute poisoning manifests itself with cramping abdominal pain, diarrhea which may be bloody or black from lead sulfide. The patient may die from collapse on the second or third day. If the patient survives, he will pass into the chronic phase. Treatment consists of gavage with the instillation of magnesium sulfate to make lead sulfate which is insoluble. A better practice would be to instil ethylenediaminetetraacetic acid, a chelating agent. This type of chemical compound preferentially sequesters a metal within its molecule and hides it from chemical activity. BAL or EDTA should be given to combat the absorbed compound.

The symptoms of chronic lead poisoning are multitudinous. It is very interesting that several cases of chronic lead poisoning have been reported from bullets embedded in tissue for some time. Anemia is a prominent sign of this condition. It is thought that the anemia is due to decreased resistance to trauma. Basophilic stippling may be found but its absence by no means rules

out lead as the cause of the anemia. Children with growing bones usually show a lead line. This line is located proximal to the epiphyseal plate (Figure 1). As treatment progresses this line will decrease in

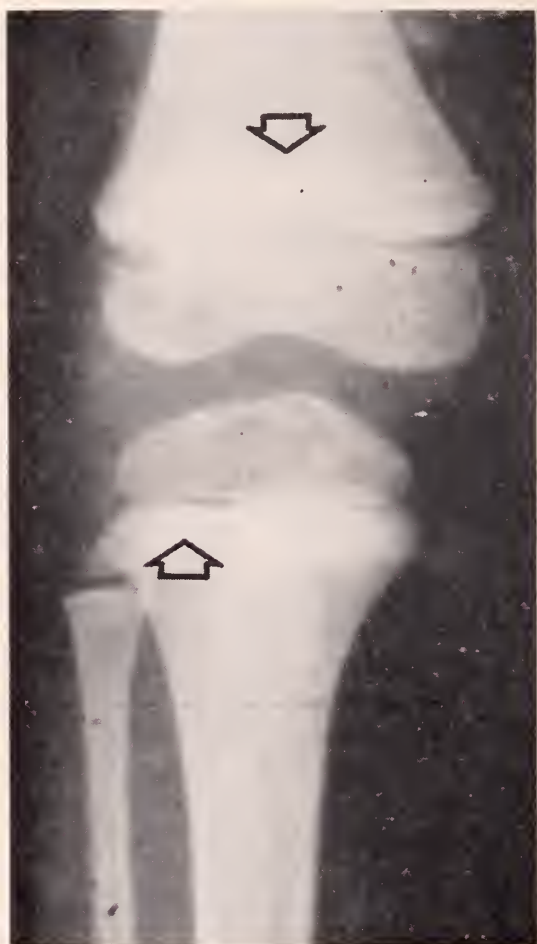


Figure 1.—Child with pica. Roentgenogram of knee joint. Chronic lead poisoning resulting from ingestion of plaster. Note lead lines indicated by arrows.

density and gradually disappear. Adults sometimes will show a lead line on the gums. It seems that teeth are necessary to have a lead line. This line is a bluish to black discoloration of the gums, most prominent on the gingival papillae. Wrist drop and foot drop may result from peripheral neuritis, and central nervous system symptoms include seizures, paralyses and melancholia. Urine levels above 100 gamma per day are indicative of lead intoxication. Treatment is with EDTA or BAL.

ALKALOIDS

In the alkaloid group, the derivatives of the opium poppy are so well known that we shall confine ourselves to a discussion of two plant alkaloids used in insecticides and rodenticides — strychnine and nicotine.

The main use of *strychnine* is a rodenticide especially for moles, however, there are some medicinal uses of this alkaloid. Strychnine causes hyperexcitability of the reflex centers of the cord and medulla. Therefore acute intoxication can mimic tetanus. Within five to fifteen minutes dysphagia, muscular twitchings, and violent tetanic convulsions follow one on the other. Death occurs within one to two hours. Therapy is very interesting in that general anesthesia or barbiturates intravenously must be given in order for the physician to minister aid, as merely touching the patient will send him into a violent tetanic convulsion. Gavage the stomach with potassium permanganate, remove, and instil charcoal to bind the strychnine. If the patient can be carried over the violent phase with anesthesia and expectant supportive therapy he will live.

Nicotine is found as a component of insecticides. This alkaloid is first a central nervous system excitant, then a depressant. The symptoms of acute poisoning depend upon the dose. With a large dose death ensues in a few seconds due to complete central nervous system paralysis. With smaller doses, nausea, vomiting, abdominal pain, and diarrhea ensue. A nicotine odor is usually apparent. Convulsions, spasm, and respiratory collapse occur. The latter is similar to that of curare. Therapy is gavage with charcoal or tannic acid and artificial respiration. Small doses of strychnine may be valuable.

HYDROCARBON SOLVENTS

The hydrocarbon solvents include many offenders and one is selected for illustration. This is *kerosene*, a compound which may be inhaled or ingested. The primary source of concern to the physician is inhalation or aspiration. Kerosene is capable of giving a "jag" and there are reports

of children becoming addicted to sniffing and inhaling both gasoline and kerosene. The symptoms of acute intoxication are fullness of the head, headache, blurred vision, unsteady gait, "jag", nausea, twitching, collapse, and coma. Aspiration or inhalation leads to pneumonitis. (Figure 2) There is no specific remedy and therapy is directed toward emptying the

not even have a headache. As carbon tetrachloride is a brother to chloroform (carbon trichloride) a soporific effect is to be expected. There may be, and frequently is, a latent period of several days when urinary suppression and jaundice supervene. Convulsions herald the appearance of hepatic coma. The therapy is leveled at sparing the liver and kidneys with general supportive therapy. Chronic exposure and seemingly single exposure can lead to cirrhosis of the liver and nephrosis. This is of interest in workmen's compensation cases.

Chlorinated organic compounds are used in great quantities as insecticides. Chlorophenothane (D.D.T.), benzene hexachloride, chlordane, aldrin, dieldrin, and toxaphene are the outstanding members of this group. Poisoning with these agents is accidental or suicidal. In general, treatment of the central nervous system excitation brought about by these compounds is best accomplished with sedatives of the barbiturate group, of which pentobarbital is perhaps the most suitable.

DINITROPHENOLS

The dinitrophenols are used as insecticides. The most prominent of these is dinitro-orthocresol or *DNOC*. Exposure may be oral, respiratory, or through the intact skin. The symptoms are nausea, vomiting, gastric distress, fever, sweating, deep rapid respirations, cyanosis and collapse. The course is rapid with death or recovery within twenty-four to forty-eight hours. Treatment is to remove the agent as rapidly as possible; ice bath to reduce the fever; oxygen, saline, and thiouracil intravenously to reduce the metabolic rate.

ORGANIC PHOSPHATES

Of exceptional importance are the *organic phosphate insecticides*, malathion, parathion, tetraethyl-pyrophosphate, demeton, etc. These compounds are powerful cholinesterase inhibitors. The oral, respiratory, or intact skin may be the route of exposure. In children the symptoms may be manifest by a deep coma without other preceding symptoms. Adults and some children exhibit lacrimation, saliva-



Figure 2.—Child. Chest roentgenogram kerosene ingestion. Note pneumonitis in right lower lobe resulting from aspiration.

stomach so that aspiration does not occur. Fat and oil in the food or therapy should be avoided as this will increase the absorption. The other symptoms are treated expectantly.

CHLORINATED HYDROCARBONS

Carbon tetrachloride takes its toll each year. The majority of these intoxications are accidental. Alcohol ingestion potentiates the toxicity of this compound. This is very strikingly demonstrated clinically in such cases as two people cleaning a rug with carbon tetrachloride in the same poorly ventilated room, one is drinking and the other is not. The one who has been drinking may become poisoned and die while the nondrinking companion may

tion, nausea, diplopia, respiratory distress and failure, decreased blood pressure, muscular tremors, convulsions, and paralysis. The treatment is large doses of atropine sulfate 1 to 2 mgm. per hour intravenously. Give this as often as necessary to control symptoms. Be vigorous. Small doses of magnesium are helpful. A depression of blood cholinesterase activity may be demonstrated by appropriate laboratory tests.

SALICYLATES

Salicylism is seen oftener than is thought by most physicians. The acute phase of poisoning is usually seen in children except for an occasional attempted suicide. Ringing in the ears, deafness, confusion, dim vision, perspiration, hematuria and purpura, rarely bullous, may be seen. The whole syndrome may resemble delirium tremens. The most alarming symptom is marked unremitting acidosis with dyspnea. This is the effect which kills the patient. Therapy is gavage, with instillation of magnesium sulfate. But most important is very careful regard to the acid-base balance. A little talked about chronic state of salicylism exists. This is manifested by diarrhea, depression, anorexia, renal irritation, and dermatitis. The latter may be desquamative, eczematoid, or erythematous. The treatment is drug removal and symptomatic.

POISON INFORMATION BUREAU

To aid in these problems the Office of the Coroner of Orleans Parish maintains a **Poison Information Bureau**. This Bureau is for physicians only and only information is offered; treatment is not given. We offer to share our experiences with you and the resources of our library on toxicology. In return we ask of you to answer a follow-up letter which will be mailed to your office in about three weeks. This is to ascertain the effect of therapy. We do not contact the patient, we only contact the physician. We do not disturb the physician-patient relationship. This service may be obtained by calling **New Orleans, GAlvez 6100** or **GAlvez 2863** any time day or night. If we do not have

the answer immediately we will look it up and call or wire you.

The physician may at anytime see a case of poisoning. The agents which we have discussed are ubiquitous. Awareness is the keystone to proper management. This paper is not intended to be a complete discussion of all poisons, but rather includes a selected group.

A short list of general references is given below. Data concerning individual toxic substances is widely scattered in textbooks and the dynamic literature. The references given here are perhaps the more useful and available of all general sources concerning poisons.

ANNOTATED BIBLIOGRAPHY OF VALUE IN REFERENCE TO POISONING

A. Textbooks and articles dealing specifically with poisons, poisoning:

1. *Common Household Poisons and Their Antidotes*, Connecticut Health Bulletin 69: No. 7, 1955.

An approach to poisons by their common trade names and the commercial preparations in which they are found. Unfortunately, this compilation is not available in many libraries. However, copies may still be available from the Connecticut State Department of Health.

- †2. Kaye, S.: *Handbook of Emergency Toxicology*. pp. 303, 1954, Charles C Thomas.

A valuable feature is the fairly extensive tables of commercial sources of poisons, and poisons generally found in the household. Many trade names are listed here. The majority of the monograph is given over to an alphabetical listing of poisons, symptoms of poisoning, treatment, and qualitative determination.

- †3. Lucas, G. H. W.: *The Symptoms and Treatment of Acute Poisoning*. pp. 308, 1953, MacMillan.

An extremely practical small book outlining the diagnosis and treatment of many types of poisoning. A pocket sized book well adapted to be carried in the car or bag.

- *†4. Thienes, C. H. and Haley, T. J.: *Clinical Toxicology*, pp. 457, 1955, Lea and Febiger.

More than half of this book is devoted to poisoning, treatment, and diagnosis. The remainder is devoted to the chemical

(toxicological) diagnosis of poisoning. An encyclopedic type of presentation, well written, and easy to read.

*†5. Von Oettingen, W. F.: *Poisoning*, pp. 524, 1952, Hoeber.

As stated in the subtitle, this book is a guide to clinical diagnosis and treatment. A unique feature is the first near-half of the book which deals with the structural and functional pathology and biochemical changes in poisoning management and other general phases of poisoning. The remainder of the book deals with symptoms and treatment of various types of poisoning. Extremely valuable is the large number of references given concerning individual toxic agents.

B. Allied books and publications of great use in the treatment, diagnosis, and therapy of poisoning, and general understanding of poisons:

*†1. Glaister, J.: *Medical Jurisprudence, and Toxicology*, pp. 755 Ed. 9, Williams and Wilkins, 1950.

Approximately one-third of this excellent textbook comprised an encyclopedic coverage of the symptoms and treatment of various types of poisonings.

*†2. Gonzales, T. A., Vance, M., Helpen, M., and Umberger, C. J.: *Legal Medicine. Pathology and Toxicology*, Ed. 2, pp. 1349. Appleton-Century-Crofts, Inc. 1954.

Approximately half of this large volume deals with toxicology, with excellent data on toxicological analysis, and also much about diagnosis and treatment of poisoning.

*†3. Goodman, L. S., and Gilman, A. *The Pharmacological Basis of Therapeutics*, Ed. 2, pp. 1831, The MacMillan Company, 1955.

A classic among pharmacology textbooks. Much data available here in regard to poisonings, side effects of drugs, and a wealth of material by which basic mechanisms of drug action and poisonings can be determined.

*†4. Smith, S., and Fiddes, F. S. *Forensic Medicine*, 1955, pp. 644, Ed. 10. Little, Brown and Co.

The last third of this textbook of Legal

Medicine covers toxicology and various types of poisonings.

* Available at Library, Louisiana State University, School of Medicine, New Orleans 12, La.

† Available at Library, Louisiana State Medical Society, 1430 Tulane Ave., New Orleans 12, La.

ANTICOAGULANT THERAPY IN CORONARY ARTERY INSUFFICIENCY*

GEORGE M. ANDERSON, M. D.

LAKE CHARLES

Acute myocardial infarction does not often occur without warning. Most individuals give a history of fairly typical angina for days or weeks before the actual infarction occurs. If angina becomes increasingly severe and there is a rapidly decreasing effort tolerance then myocardial infarction is imminent. It is in the preinfarction stage that anticoagulants may be efficacious.

The precursor of myocardial infarction is coronary artery insufficiency (or angina). Atheromatosis leading to arteriosclerosis with narrowing or complete obstruction is the most prevalent lesion accounting for approximately 90 per cent of patients complaining of cardiac pain. Increasing cardiac pain parallels further narrowing of coronary vessels. Therefore, everything possible must be done to avert the final complete occlusion of myocardial infarction. It is the purpose of this paper to present 25 cases who did not respond to the usual treatment but who showed marked improvement on anticoagulant therapy, perhaps tiding them over a phase of diminished blood flow to the myocardium and giving them opportunity to develop adequate collateral circulation.

A diagnosis of coronary artery insufficiency is made from the electrocardiogram and a clinical history of precordial pain or discomfort of short duration frequently radiating to the shoulder and arms and usually precipitated by exertion or emo-

* Presented at the Seventy-sixth Annual Meeting of the Louisiana State Medical Society, Alexandria, La., April 24, 1956.

tion. In the early stages an electrocardiogram may or may not show coronary artery insufficiency, even after exercise tolerance test. Often the diagnosis is more clinical than instrumental.

The established treatment consists of using every means of increasing blood flow to the myocardium. This is done by: (1) Diminishing the demands of the myocardium for blood by curtailing physical activities and by weight reduction. (2) Increasing blood flow to the heart muscle by preventing vasoconstriction caused by tobacco, cold, and emotional upsets, and by administering vasodilator drugs, such as papaverine, peritrate, and nitroglycerin. Upon this regimen many patients improve and angina disappears. A few have a return to normal of an ischemic tracing (Case 1). Those patients who show no clinical improvement or whose symptoms increase in severity are advised to enter the hospital for five to ten days to initiate ambulatory anticoagulant therapy.

Treatment consisted of papaverine, peritrate, nitroglycerin, demerol, heparin and dicumarol. Aqueous heparin, 30 to 50 mgs. was given intramuscularly every four hours. The Lee White clotting time was maintained between thirty to sixty minutes until sufficient dicumarol lowered the prothrombin activity to 10 to 30 per cent

of normal. On this regimen the patient improved sufficiently to be discharged in five to ten days on ambulatory dicumarol therapy. The prothrombin activity was maintained for six to eight weeks at 30 per cent of normal by weekly determinations.

CASE REPORTS

Case No. 1.—G. D., age 49, business executive was first seen November 23, 1951. He stated that eight days previously he had experienced substernal burning while playing golf and had a return of symptoms six days and two days previously. A complete physical examination was normal. Electrocardiogram at that time (Figure 1-A) revealed an inversion of T 1, V 2, 3, 4, 5. His activities were restricted and coronary artery dilators prescribed. A repeat electrocardiogram December 10, 1951, revealed essentially the same findings except T 1 was now upright and TV 5 was upright. Electrocardiogram on January 30, 1952 (Figure 1-B) and November 11, 1954, revealed upright T waves in all leads. This patient did not receive anticoagulants and he has been asymptomatic since therapy was started. He has resumed full activity.

Case No. 2.—R. R., 63 year old white male, retired rice farmer was first seen September 18, 1952. He was a known hypertensive for many years and eight days before had an onset of congestive heart failure which responded to digitalization and salt restriction. His cardiogram at that time revealed a bundle branch block and auricular fibrillation. He was maintained on this regimen plus weekly mercurial diuretics and was comfortable with moderate limitation of his activities. He was seen at intervals of four or five

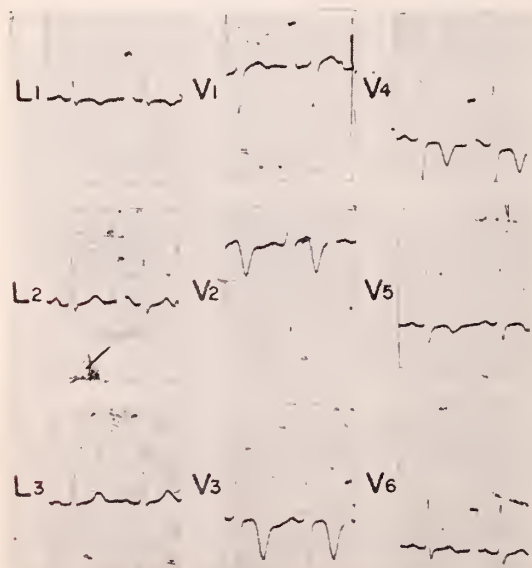


Figure 1-A

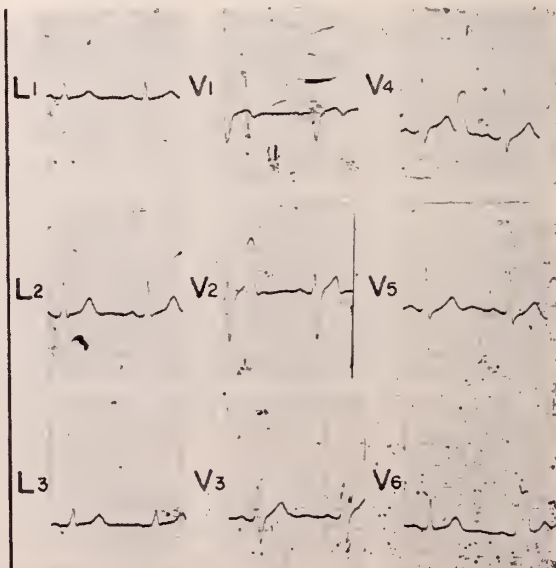


Figure 1-B

months for examination and in October 1955 he began to experience angina on walking one or two blocks or visiting with his friends. He was given coronary dilators without relief and restricted his activities to remaining in his room because the slightest effort of even talking resulted in angina.

On December 13, 1955, he was hospitalized for eight days to begin anticoagulant therapy. Previous to admission he was averaging four injections of morphine weekly and approximately twenty to thirty nitroglycerin tablets a week. After two weeks of anticoagulant therapy he was able to visit with his friends and to walk around his house, and take rides. He averaged two nitroglycerin tablets a week and one injection of morphine a month. He has remained on anticoagulant therapy although it necessitates his driving twenty-five miles once a week to have his pro-

thrombin time test performed. (Figure 2).

Case No. 3.—W. C., age 64, white male, pharmacist, normotensive. This patient was first seen on May 11, 1953. He gave a history of onset of substernal pain five days previously. This pain had a gradual onset and was located in the substernal region and was brought on by exercise. Electrocardiogram at that time (Figure 3-A) showed T 1, TV 2 inverted, and RST 3 segment elevated which was interpreted as evidence of myocardial ischemia and a diagnosis of coronary artery insufficiency was made. He was placed on peritrate and nitroglycerin and advised to discontinue tobacco and to remain at home but not at bed rest. On May 15, 1953, he was admitted to the hospital because of a recurrence of severe anterior chest pain. Electrocardiogram at that time (Figure 3-B) showed an inversion of T 1, V 2, 3, 4, 5. He was placed on anticoagulant ther-

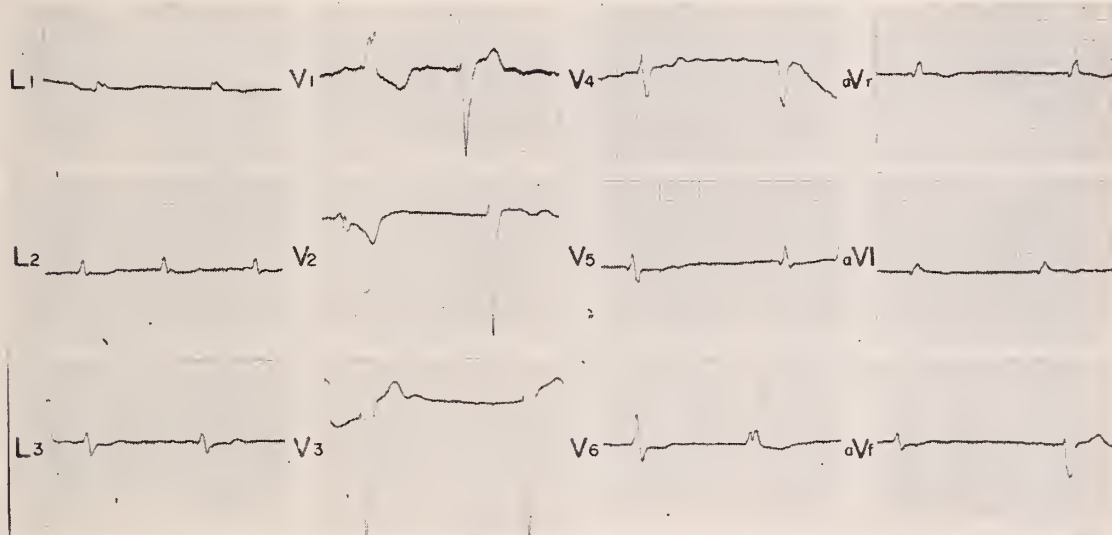


Figure 2

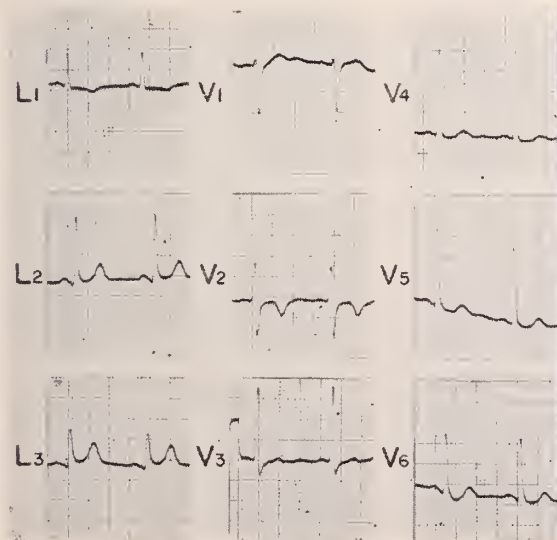


Figure 3-A

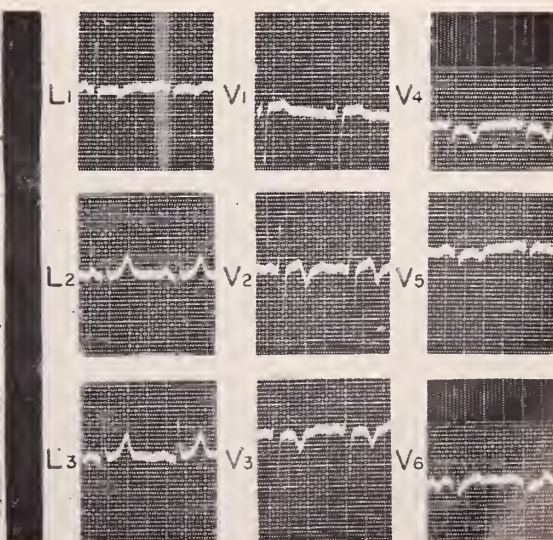


Figure 3-B

apy but not confined strictly to bed rest but allowed and encouraged to move about his room. Electrocardiogram May 18, 1953, (Figure 3-C) revealed T wave improvement. He had no further pain and was discharged from the hospital on May 21, 1953, anticoagulant therapy being continued as an out-patient until July 8, 1953, at which time it was discontinued. Subsequent electrocardiograms on September 4, 1953, and February 3, 1955, (Figure 3-D) were interpreted as normal.

Case No. 4—A. S., 37 year old white male, was admitted to the hospital on December 30, 1953. Six months before admission he had experienced substernal pain on several occasions which was brought on by activity. He had no further difficulty until the week before admission when he noted an onset of substernal pain on walking or

riding his bicycle at work. On each occasion he obtained relief with rest. On the night of admission he attempted to stomp a mouse and chased the mouse around the room when he experienced a gradual onset of severe chest pain, sweating, and radiation of the substernal pain into his left arm. This pain had a duration of fifteen minutes and subsided without medication. When seen in the hospital his blood pressure, physical examination, and electrocardiogram (December 31, 1953, Figure 4-A) were entirely normal. Electrocardiogram after exercise January 1, 1954, (Figure 4-B) produced an inversion of T 1, V 2, 3, 4, 5, 6. He was placed on anticoagulant therapy and remained ambulatory to have a gastrointestinal work-up which was entirely normal. He was discharged from the hospital on January 11, 1954 and he experienced

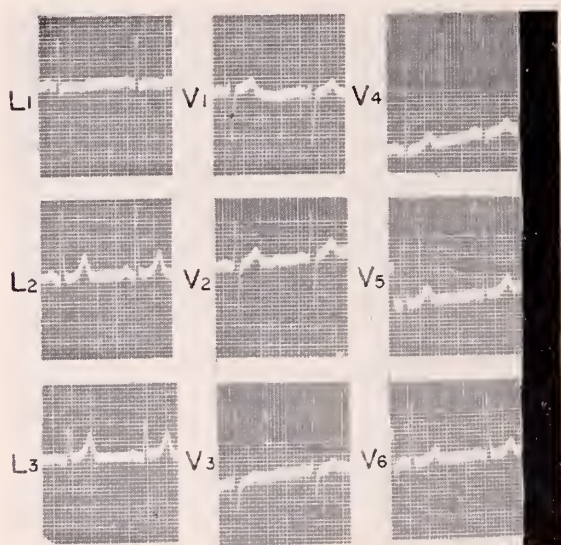


Figure 3-C

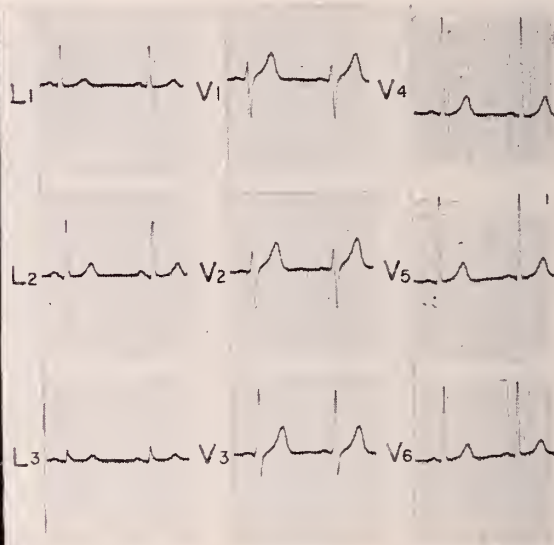


Figure 3-D

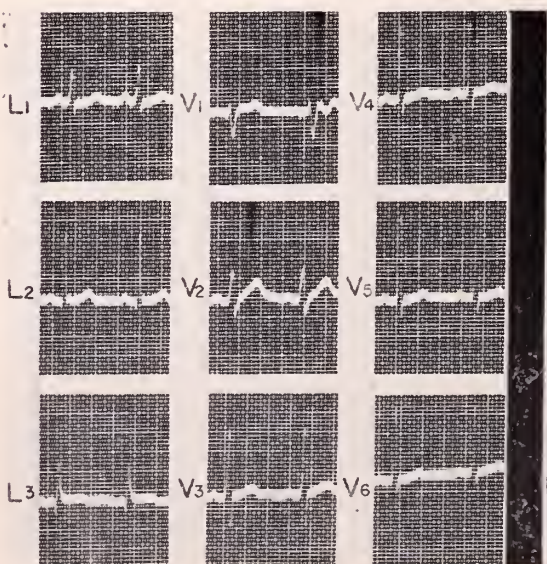


Figure 4-A

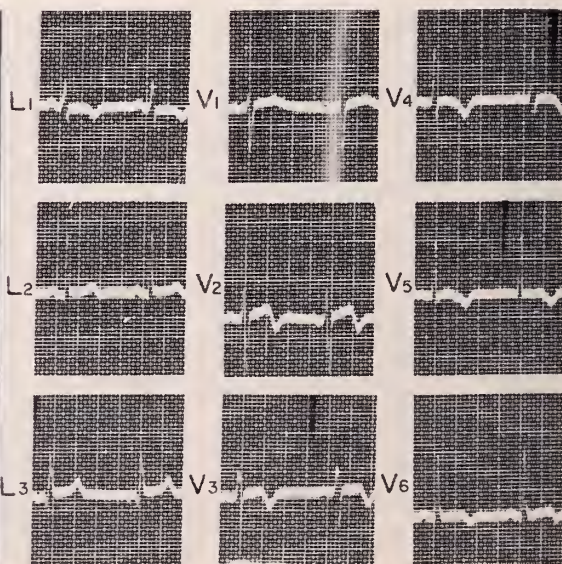


Figure 4-B

no further chest pain. He was maintained on ambulatory out-patient dicumarol therapy until February 2, 1954 when it was discontinued. Electrocardiogram February 2, 1954, (Figure 4-C)

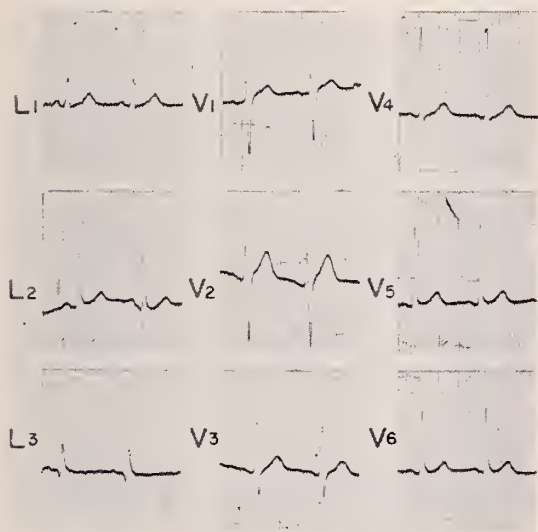


Figure 4-C

was unchanged in comparison with the tracing of December 30, 1953. Subsequent electrocardiograms and exercise cardiograms every six months have failed to reveal coronary artery insufficiency and he has not experienced any further angina.

Case No. 5.—Mrs. J. W. McF., age 71, white female, housewife, was a mild hypertensive for a number of years but with no complaints until the first week of November 1951, when she began to have substernal pain occurring with effort. Electrocardiogram, on November 14, 1951, (Figure 5-A) was interpreted as normal and a repeat electrocardiogram with exercise, on November 26,

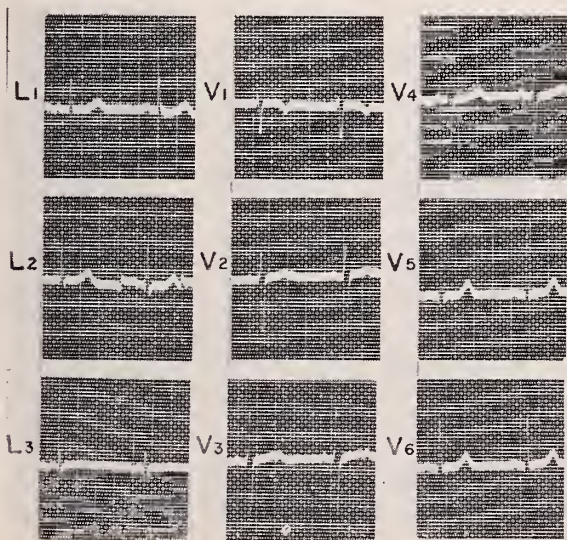


Figure 5-A

1951, (Figure 5-B) was essentially unchanged. She was given vasodilators in spite of the negative electrocardiograms, and on December 12, 1951, (Figure 5-C) admitted to the hospital because of an increase in severity of pain. Electrocardiogram on admission at this time showed an inversion of TV 1, 2, 3, 4. She was placed on anticoagulant therapy but continued to have recurrent substernal pain. She was discharged January 4, 1952, and has had no further episodes of angina. Electrocardiograms on January 4, 1954, (Figure 5-D) and December 6, 1955, as part of her routine annual physical, showed no evidence of myocardial ischemia.

Case No. 6.—G. O., 45 year old white male, automobile dealer, had a normal routine electrocardiogram December 14, 1948, and April 29, 1954. On July 9, 1954, he experienced a gradual onset of substernal pain which occurred after walking three blocks and that evening at rest he had a recurrence of his substernal pain. Electrocardiogram July 10, 1954 (Figure 6-A) presented no changes from his previous tracings and an exercise electrocardiogram was unchanged. He was treated with vasodilators and restricted to his home because of the typical anginal history. On July 14, 1954, he was admitted to the hospital because the angina was becoming more frequent although he had had a marked restriction in his activities. Electrocardiogram upon admission (Figure 6-B) revealed T 1, TV 1, 2, 3, 4, 5, 6 to be inverted. He was placed on anticoagulants. Electrocardiogram July 24, 1954, showed slight T wave improvement, and on July 30, 1954, (Figure 6-C) showed further improvement. During this time his angina had stopped. Electrocardiogram August 14, 1954, showed further improvement. His last electrocardiogram was April 2, 1956 (Figure 6-D) which was interpreted as normal. He has had no recurrence of his angina.

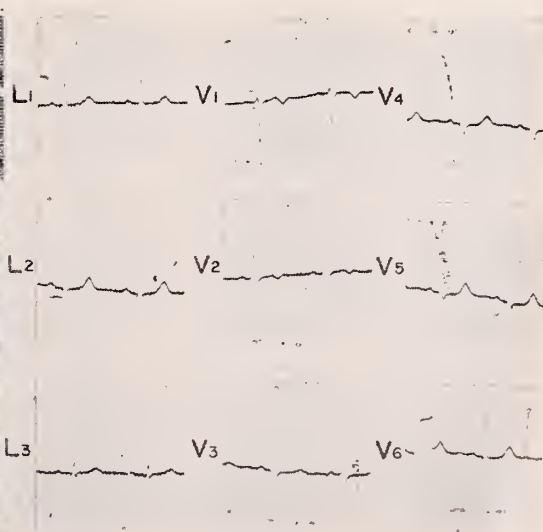


Figure 5-B

Case No. 7.—W. L., white male, age 41, operator at plant was first seen on December 19, 1955. He had been in good health until two weeks previously when he experienced substernal burning pain which radiated into both arms lasting approximately five minutes. This occurred after running approximately three blocks. The following day he noted a return of pain after doing his chores but the severity was much less than the day before. On December 14, 1955, he noted substernal pain with radiation into the left arm after hurriedly walking 400 yards.

The only positive finding on physical examination was a blood pressure of 150/90, physical

examination was negative. His resting electrocardiogram was normal. Exercise electrocardiogram revealed T-wave changes in V 3, 4, 5, 6. He was advised to restrict his activities, discontinue tobacco, and given coronary dilator drugs. On December 19, 1955, he had a return of severe chest pain which persisted for one hour, and was admitted to the hospital. Resting electrocardiogram (Figure 7-A) at that time showed no change in the previous tracing. Electrocardiograms on December 22, 1955, and December 28, 1955, were normal. He remained ambulatory and was placed on anticagulant therapy. His prothrombin time on December 28, 1955, was 25 per cent of normal;

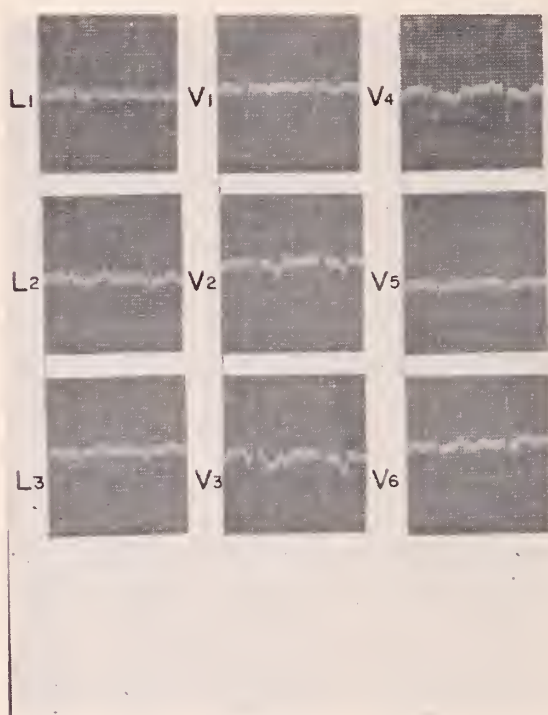


Figure 5-C

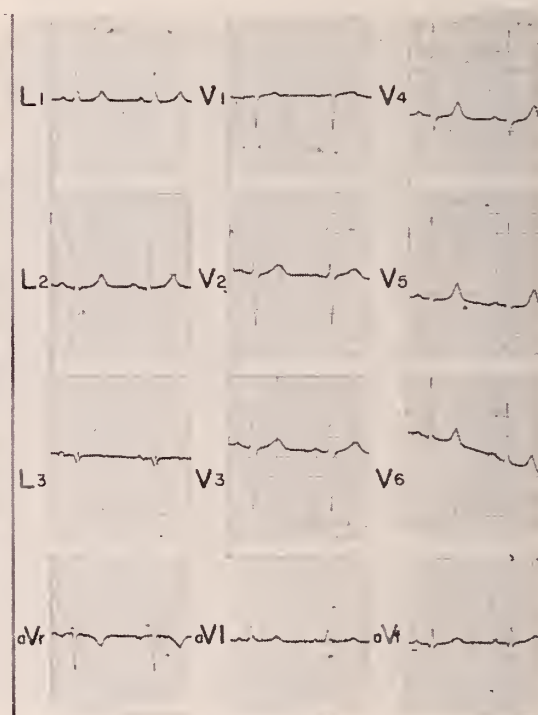


Figure 5-D

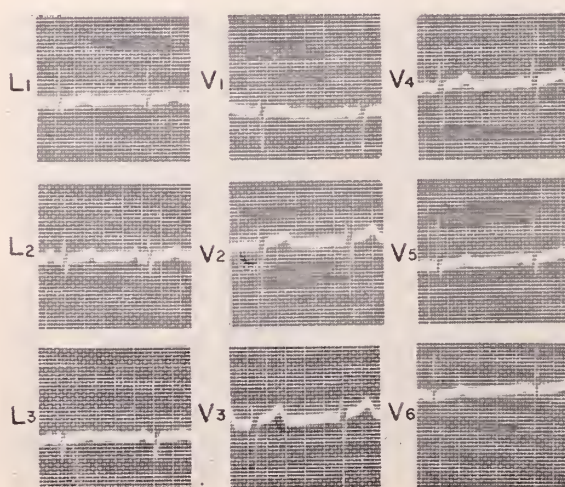


Figure 6-A

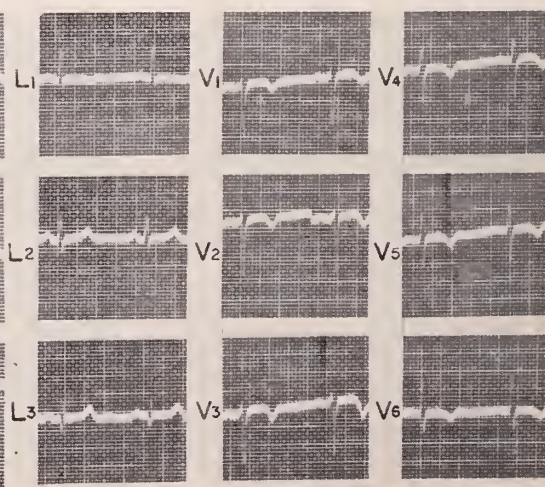


Figure 6-B

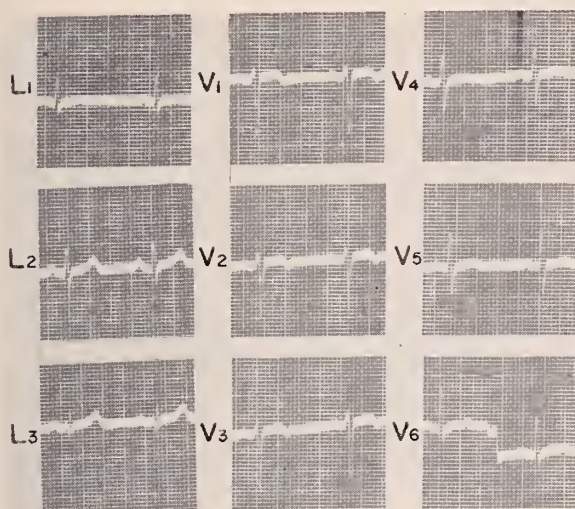


Figure 6-C

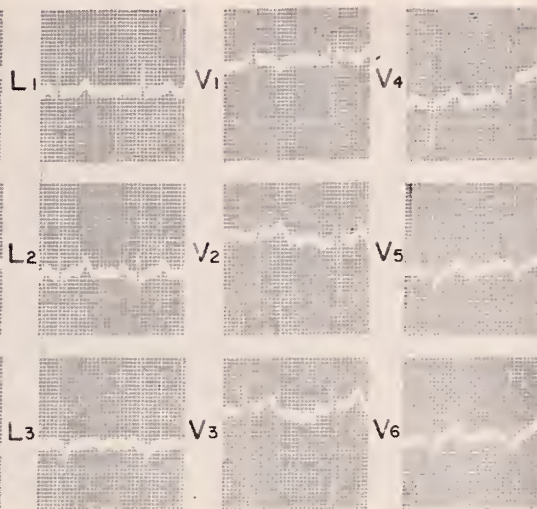


Figure 6-D

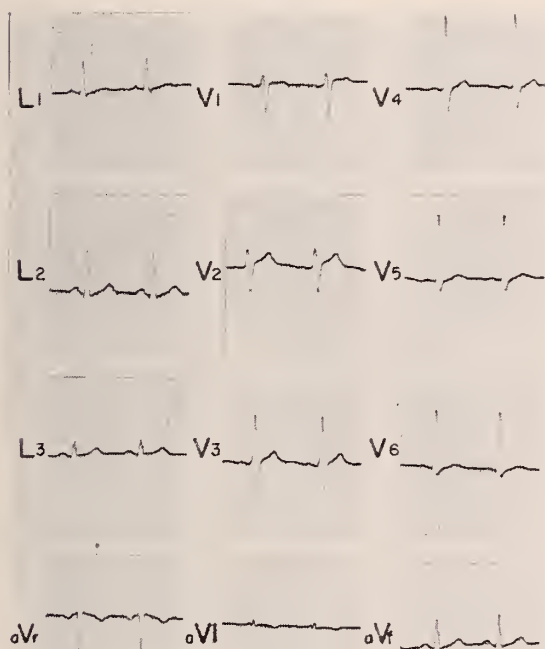


Figure 7-A

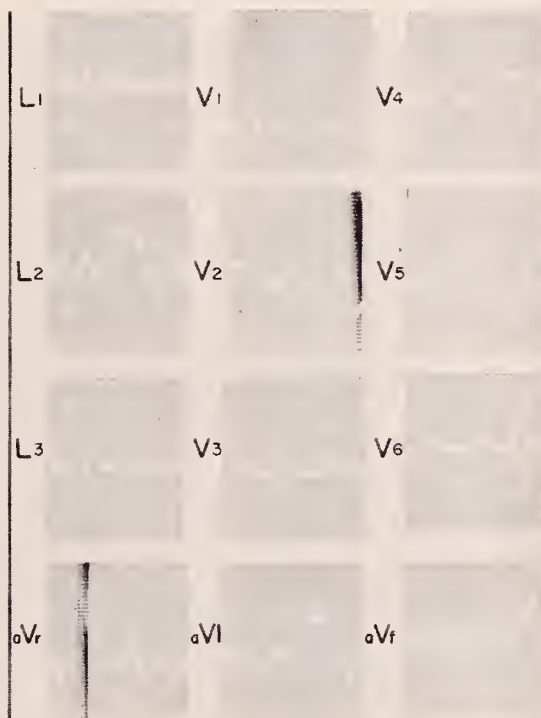


Figure 7-B

December 29, 1955, was 40 per cent of normal; December 30, 1955, was 35 per cent of normal; December 31, 1955, was 45 per cent of normal. He was discharged on ambulatory anticoagulant therapy and on January 1, 1956, he was readmitted to the hospital because of severe anterior chest pain which persisted for four to five hours. Electrocardiogram on January 3, 1956, (Figure 7-B) revealed acute anterior myocardial infarction.

DISCUSSION

Twenty-five cases that did not improve on the established therapy for coronary artery insufficiency were given anticoagu-

lants. Twenty-four cases treated with anticoagulants made definite clinical improvement; one developed myocardial infarction. Ten had the electrocardiogram return to normal. In these cases vasodilators failed to improve the blood flow to the myocardium sufficiently to relieve angina. It was only after anticoagulants were given that clinical improvement was noted. Apparently, the blood flow had definitely been increased by the addition

of anticoagulants. That blood flow can be increased in a diseased blood vessel by anticoagulant therapy has been shown by the excellent results obtained in the treatment of basilar artery thrombosis and internal carotid artery insufficiency.^{1, 2}

Nichol³ reported good results of therapy in 177 patients with coronary insufficiency treated with anticoagulants but apparently he began anticoagulants immediately without a trial of the usual vasodilator therapy. Engelberg⁴ reported heparin therapy in 19 patients with good results.

SUMMARY

1. Twenty-four cases of coronary artery insufficiency that failed to respond to the usual therapy of vasodilators and restriction of activity were treated with anticoagulants with good results.

2. One case developed myocardial infarction. He recovered.

3. Anticoagulant therapy is recommended in the treatment of coronary artery insufficiency.

Note: I wish to thank Dr. W. A. K. Seale, Dr. Robert Howell, Dr. James Hodge, Dr. Loree Young, and Dr. Lucas Digiglia for the use of their cases.

REFERENCES

1. Millikan, Clark H., Sickert, Robert G., Shick, Richard M.: Studies in cerebrovascular disease. III. The use of anticoagulant drugs in the treatment of insufficiency or thrombosis within the basilar arterial system. Proc. Staff Meetings Mayo Clinic, 30:116 (March 23) 1955.
2. Millikan, Clark H., Sickert, Robert G., Shick, Richard M.: Studies in cerebrovascular disease. V. The use of anticoagulant drugs in the treatment of intermittent insufficiency of the internal carotid arterial system. Proc. Staff Meetings Mayo Clinic, 30:578 (Nov. 30) 1955.
3. Nichol, E., Sterling, Phillips, William C., Jenkins, Valentine E.: Anticoagulants in coronary heart disease. M. Clinics North America (March) 1954.
4. Engelberg, Hyman: Simplified heparin therapy of impending and acute myocardial infarction. Ann. Int. Med. 44:466 (March) 1956.

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SOME COMMON SKIN DISEASES OF INFANCY

J. DUDLEY YCUMAN, JR., M. D.
SHREVEPORT

Dermatitis, or eczema, is one of the commonest diseases occurring in infancy. Because of its frequency, and its severity

at times, it becomes an important entity, not only to the specialist but also to the general practitioner, who sees and treats 80 per cent of these infants.

About 75 per cent of the dermatoses seen in infancy are atopic in nature. Seborrheic dermatitis causes about 15 per cent of the cases, and the rest are due to secondarily infected eczemas, infectious eczematoid dermatitis, fungus infections, diaper rash, contact dermatitis and nummular eczema.

INFECTIONS

Of infections, impetigo is seen infrequently. Impetigo, of course, responds readily to the antibiotic ointments such as Bacitracin or Neomycin, if the crusts are removed and the ointment applied to the raw area. The secondary infection of eczema responds to the same medication. When the infection is controlled the primary eczema will need treatment. In infectious eczematoid dermatitis, treatment consists in a combination of the antibiotic ointments plus drugs used in the eczematous dermatoses as mentioned later under atopic dermatitis. Here, there is not only infection but also a bacterial sensitization of the skin which accounts for the eczematous reaction and the much slower response to treatment.

Sulfa and penicillin ointments should not be used in skin infections because of a very real danger of a reaction of sensitization to these drugs, which can be much worse than the original disease.

Antibiotics by needle and by mouth are used in extensive involvement or where fever occurs, as nephritis has been reported from these infections even in some cases when the infections seemed relatively insignificant.

Of the fungus infections, that due to yeast or *Monilia albicans* is of most frequent occurrence. Ringworm is seen rather infrequently at this age. Monilial dermatitis often begins in the anal or intertriginous areas and appears as a bright red, sharply outlined lesion with slight scaling particularly at the border.

* Presented at the Seventy-sixth Annual Meeting of the Louisiana State Medical Society, Alexandria, La., April 24, 1956.

Satellite lesions are frequently seen nearby.

Treatment consists in keeping the baby in dry diapers at all times with strict cleanliness in this area. An effective lotion recently suggested is; Mycostatin 3 tablets, bismuth subgallate, bismuth subcarbonate of each 15 gm., glycerine 10 cc., aqua dest. qs 60 cc. This may be applied several times daily. This lotion must be kept refrigerated and new lotion made up every few days as the mycostatin deteriorates rapidly. One may also use 1 per cent gentian violet solution powdered with talc, or Vioform cream.

SEBORRHEIC DERMATITIS

The commonest variety of seborrheic dermatitis begins as cradle cap with superficial scaly lesions on the cheeks. The scale of seborrheic dermatitis has a dirty gray yellowish greasy appearance. The intertriginous areas and umbilicus may become involved with an oozing eczematoid dermatitis. Erythematous yellowish scaly patches may occur on the trunk and extremities. They may coalesce to cover extensive areas.

The dry scaling scalp lesions usually respond to an ointment containing 2 per cent salicylic acid, 2 per cent sulfur and 10 per cent olive oil in petrolatum, applied several times daily along with daily shampoo. The scaly lesions of the body may be treated with a similar preparation without the olive oil, Vioform cream or 3 to 5 per cent crude coal tar in zinc oxide paste.

If the hair is matted down by a thick yellowish greasy scale, covering a red oozing skin, compresses of diluted (1:15) Burow's solution should be used to remove this. The hair is then cut short. An antibiotic ointment (Bacitracin, Neomycin) may be used for a few days until the acute inflammation subsides and then the mild sulfur and salicylic acid salve will usually prove beneficial.

The intertriginous lesions are treated with drying lotions such as Calamine or 1 per cent aqueous gentian violet liberally powdered with talc. Vioform cream or a 5 per cent solution of coal tar in zinc

oxide paste used along with the above preparations often helps; however, ointments in these areas are not always well tolerated.

Whenever one uses sulfur, salicylic acid, the tars, ammoniated mercury, etc., one must constantly be on the alert for intolerance or contact allergy from their use. Any dermatitis that becomes worse or irritated following any application should have this preparation immediately discontinued until the reason for the flare-up can be explained.

Soybean foods, Nutramigen, Meat Base Formula, or other elimination diets do not help seborrheic dermatitis. A reduction of fat is recommended by some, as seborrheic dermatitis is often seen in fat babies.

INFANTILE ECZEMA

Infantile eczema or atopic dermatitis of infancy frequently begins at about three months of age, or later.

The acute phase of atopic dermatitis at this age usually begins on the cheeks as an erythematous papular or papulovesicular symmetrical dermatitis. This often shows oozing and crusting from excoriation. It often spreads to involve the face and scalp, and further involvement manifests itself as sharply outlined patches of dermatitis of the extremities and trunk.

When the disease becomes subacute or chronic the skin lesions become dry, with scaling and excoriations from the often intractable itching.

If very severe, the entire body can become involved with an erythroderma and the child appears as a red, scaling dry or oozing, excoriated, generally miserable, irritable, scratching and rubbing little creature. Their feet and hands are usually blue.¹ These infants are very sick and because of the marked constant itching and irritability, they sleep poorly, their nutrition is poor, diarrhea is common, and glandular enlargement is usually present. This form of the disease is quite chronic, responds poorly to any form of treatment, except possibly the steroids. There is usually clearing after many difficult months.

The lichenified excoriated scaling der-

matitis seen in the cubital and popliteal spaces as well as on the face and neck, is the typical lesion of atopic dermatitis of childhood and is only rarely seen in infancy.

About half of these infants recover completely spontaneously by the time they are two years old. The other 50 per cent may recover from their infantile eczema but develop atopic dermatitis, asthma, hayfever, or any combination of these later in life, often beginning in childhood.

The course of infantile eczema shows remissions and flares, often for no apparent reason. Teething, a cold, upset stomach, changes in temperature and weather, etc., will often cause a controlled dermatitis to flare.

In getting the history one frequently finds allergies in the family; occasionally the mother knows of a definite food intolerance, and often one finds frequent changes in formula since birth because of excessive colic, gas and spitting up. A blood eosinophilia is often present.

In its differentiation from seborrheic dermatitis atopic dermatitis usually begins on the cheeks and spreads to the scalp. Atopic dermatitis does not show the greasy yellow scales, although this is not always found in all seborrheic dermatitis. Seborrheic dermatitis usually begins before four months of age, atopic dermatitis after three months of age. Pruritis is usually mild in seborrheic dermatitis and severe in atopic dermatitis. Most seborrheic dermatitis responds readily to local therapy whereas this is not true for atopic eczema. In seborrheic dermatitis there is no eosinophilia, the allergy skin tests are negative and there is no family history of allergies.

To determine if foods are causing trouble some advise food skin tests. However, in this age group all foods can be eliminated and the child placed on a single food elimination diet such as a soybean milk (Mul-Soy, Sobee), Nutramigen or Meat Base Formula (Gerber), and water. If foods are causing the eczema, in my experience, itching is much relieved in

four or five days, although there is little change in the dermatitis. By ten days or two weeks the dermatitis has shown considerable improvement. If this has occurred single foods are added to the diet every three days until the child's diet is built up. Vitamins are added in the same manner as a new food would be.

If there is still some question about foods, the baby is put back on full diet for a week or so, and if a soy bean product was used during the first trial, he is placed on Nutramigen or Meat Base Formula and water. If no improvement occurs within ten days or two weeks, further food manipulation is stopped. It is not necessary to keep a baby or child on a greatly restricted diet for weeks or months in the hope that improvement will occur. The improvement that I have seen from food elimination has been relatively prompt. Further, the child's nutrition must always be of primary concern regardless of the eczema. This is particularly true in atopic erythroderma where food elimination has been of little value and may be dangerous. These children need a high protein diet, and all of it you can get them to take.

One of the drawbacks to the soy bean preparations is that they cause diarrhea, which may be very troublesome. In the very young, particularly if the condition of the infant is not too good, and where a diarrhea may prove dangerous it is better to use Nutramigen¹ than the soy milk. The new powdered or liquid Mul-Soy and the new liquid Sobee are said to cause less trouble in this respect than the old products did.

In this way, one can rather rapidly find which foods, if any, are causing trouble. Egg, wheat, tomato, and orange are the most frequent offenders, next to cow's milk which, by far, causes the most trouble, although any food eaten can be an offender. Egg, at times, can be such a potent allergen that it causes anaphylactic shock-like symptoms and therefore egg introduction into the diet should be postponed for months. Cazort² told me of cases of

his that were so sensitive to egg that egg could not be kept in the house without causing an exacerbation of the eczema.

At the same time as the elimination diet is started, inhalant elimination is also begun. Instructions are given for the preparation of a dust free, bare room. Feathers, wool, silk, kapok, orris root, and animal danders are also eliminated, from the babies' room. This is not a simple matter after the baby begins to crawl and walk about the house.

If improvement is not forthcoming the important inhalant, mold and pollen skin tests are done. These tests are further indicated if symptoms have a seasonal incidence that fits a pollen or if a flare occurs in the fall, winter and spring when house dust,⁵ feathers, wool, etc., are more prone to cause trouble.

If one gets a skin reaction to an inhalant it should be eliminated. If the reaction is to house dust, pollens or molds, desensitization may be tried. The dosage must be kept very small, for if these allergens are causing trouble even moderate doses will cause a flare. Inhalant elimination and hyposensitization treatment helps some, although it certainly does not help all in whom positive tests are found. Inhalants are usually of little significance before six months of age, but become more important as the child ages.

There are too many babies in whom no food, no inhalant, no pollen, no contactant, or anything else can be shown to cause the dermatitis. In these, no amount of dieting or other eliminations or desensitization will help. One must depend on local therapy and, in addition, the steroids in the very severe.

Local topical management is certainly the main prop in the treatment of many cases of atopic dermatitis,³ and if diligently applied much good can be done with it.

In the acute erythematous oozing forms, wet compresses of normal saline or Burrow's solution should be applied frequently. If infection is also present potassium per-

manganate 1:10,000 to 1:20,000 may be used.

When oozing is controlled Lassar's Paste may be applied which is soothing and absorbs some of the residual exudate. Simple shake lotions and pastes containing 3 to 10 per cent solution of coal tar are often useful.

For less inflamed forms 1 to 10 per cent crude coal tar is incorporated into zinc oxide paste and applied several times daily. The ointment may be covered with cotton cloth and this covered by an elastic bandage which keeps the dressing in place and reduces rubbing and scratching. Hydrocortisone ointment is very effective in some cases, relieving the itching in twenty-four hours and causing rather rapid improvement in the dermatitis. Of course, expense is a limiting factor in its use over large areas.

When there is some infection present the use of Bacitracin or Neomycin ointment alone or with the above preparation is quite helpful.

For cleansing, the excess ointment can be removed gently with olive oil and cotton. The baby may be bathed in cornstarch or Aveeno and water, using no soap or detergent.

Cardboard cuffs and other forms of restraint may be needed to minimize trauma from rubbing and scratching.

For sedation elixir phenobarbital, $\frac{1}{2}$ to 1 teaspoonful, every four to six hours may be tried. The antihistamines may also be tried. They usually help very little unless by sedation.

ACTH and the cortisones are helpful in the treatment of infantile atopic dermatitis. These drugs should be used only in severe dermatitis which has defied all previous treatment.

Of the cortisones, Prednisone is being used more and more because of fewer side reactions. The starting dose in infants is 15 to 20 mg. daily. Much improvement will occur in about a week at which time the dose is reduced in $2\frac{1}{2}$ mg. increments until the maintenance dose is determined.

If larger doses are needed the cortisones should not be used.

Short⁶ courses lasting four to six weeks followed by a rest period of four to six weeks have often given gratifying relief, with fewer side reactions.

There are indications that constant steroid therapy slows longitudinal growth in infants. Apparently cessation of therapy results in restoration of growth rate. Whether ultimate height is affected is yet to be determined.⁶

Rounding of the face (Cushingoid facies) in varying degrees is frequently seen. Infections must be closely watched for and adequately treated promptly. If surgery is necessary, proper protective adjustment of steroid dosage must be made.

Infants with atopic dermatitis should not be exposed to herpes simplex or to recently vaccinated persons as eczema herpeticum or eczema vaccinatum may occur. Both of these diseases are serious and carry a high mortality. The siblings of such infants should not be vaccinated for smallpox if they are to remain in the same house. The atopic infant should not be vaccinated for smallpox until his skin has been clear at least one year.⁶

This does not hold for tetanus, diphtheria and pertussis immunizations.¹ They may be given at any time.

I will end by quoting the first two sentences of the preface of Hill's book on infantile eczema:¹

"I have seen a large number of infants and children with eczema, and have made it my serious business for a good many years to learn as much as I could about it. In spite of this my understanding of this disorder is not good, and the older I grow, the more acutely I realize my ignorance."

I believe this is the ultimate experience of most of us who treat much infantile eczema.

CONCLUSIONS

1. Dermatitis or eczema is common in infancy.

2. Atopic dermatitis causes 75 per cent and seborrheic dermatitis causes 15 per cent of the rashes seen at this age. The rest of the common skin diseases are due to secondarily infected eczema, infectious

eczematoid dermatitis, fungus infections, diaper rash, contact dermatitis and nummular eczema.

3. Local therapy alone is used in seborrheic dermatitis. Elimination diets, the soy foods, Nutramigen and Meat Base Formula are of no value here.

4. Some cases of infantile atopic dermatitis are due to foods, inhalants or contactants. A single food elimination diet for ten days to two weeks is suggested to determine food allergy. If this along with elimination of common inhalants is not effective, skin tests for important inhalants, pollens, and molds are done and treatment instituted according to the results of these tests. Some, but not all, showing positive inhalant skin tests are helped by such treatment.

5. There are many infants in whom no food, no inhalant, no pollen, no contactant or anything else can be shown to cause the dermatitis. In these, no amount of dieting or other elimination or desensitization will help. One must depend upon local therapy and in addition, for the very severe dermatitis, ACTH and the cortisones.

6. ACTH and the cortisones should be used only in severe atopic dermatitis which has defied all previous treatment. It is better to give it in short courses rather than continuously for long periods. These patients must be kept under observation and must be watched for side reactions to these drugs. These drugs are relatively new, all is not known about their long term effects, therefore one should use good judgment in their application.

REFERENCES

1. Hill, Lewis Webb: *The Treatment of Eczema in Infants and Children*. The C. V. Mosby Co., 1956.
2. Cazort, Allen: Personal communication.
3. Sulzberger, M. B., and Wolf, Jack: *Dermatology Essentials of Diagnosis and Treatment*, The Year Book Publishers, Chicago, Illinois, 1952.
4. Gaul, L. Edward, and Underwood, G. B.: *Infantile and Atopic Eczema from Injury to the Skin by Overcare and Overtreatment*, *Am. J. Dis. Child.* 80:739, 1950.
5. Tuft, Louis: *Inhalant Allergens in Management of Atopic Dermatitis*, *A.M.A. Jour. Dis. Child.* 89:210, 1955.
6. Schiller, I. W., and Burgin, Leo B.: *The Management of Infantile Atopic Dermatitis*, *The Med. Clinics of N. Amer.* 39:1285, 1955.

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THE NATIONAL CAMPAIGN TO IMMUNIZE AGAINST POLIOMYELITIS

Organized medicine, which is the American Medical Association and its constituent societies, is about to start a national campaign to immunize the population up to the age of 40 against poliomyelitis. This is a noble undertaking and worthy of the highest traditions of our profession and its aims in preventive medicine.

The experience nationwide in the last three summers has supplied facts sufficient for sound reasoning. The Salk

vaccine is 75 per cent, or more, effective in preventing paralytic polio. In available records there are only 3 cases of polio deaths among children with three injections of the vaccine which have been reported to the Poliomyelitis Surveillance Unit. Consideration of the facts available in these three cases leaves the diagnosis in doubt.

The vaccine used in 1956 was safe. It is available in sufficient amount to immunize our susceptible population. The total incidence of polio nationally, in 1956, was 15,000 cases as compared to over 29,000, in 1955. This improvement is interpreted as the effect of the vaccine. Estimates indicate that only about 45 million individuals have received one or more injections. Relatively few have received the recommended three injections. This is less than half of the 108 million susceptibles estimated to be in the age group 0 to 39 in the continental United States. The prosecution of immunization by the physicians of the nation and the acceptance by the public is thus shown not to have been adequate. In addition, the purchases of the vaccine have gone progressively down in each of the last six months of 1956. Of the vaccinated individuals, probably less than 5 million are in the age group 20 to 39 years. The incidence of poliomyelitis among young parents in this age group is high and the degree of paralysis is severe, often with tragic socio-economic consequences.

Dr. Salk has stated it would appear that responsibility for the problem of eliminating paralytic poliomyelitis rests with each individual for whom there is a need for vaccine either for himself or for those for whom he is responsible, and "there need be little, if any, paralytic poliomyelitis in the United States in 1957, if all who are potentially susceptible are treated with vaccine that is now available."

The experience in Louisiana in the past year is one which should give grave concern to the physicians and to the public. Elsewhere in this issue figures of a startling type are given. Louisiana was

the only state in which the rate for 1956 exceeded the five year preceding median. Two states, Utah and Iowa, had rates greater than Louisiana, which were respectively, 27, 24, and 21 per 100,000. There are reasons to believe, however, that Louisiana's rate was actually greater than the two states just mentioned. This is another situation in which Louisiana is first, in which it would be much better if we were last. Louisiana is first in rate of taxation, first in the number of aged on welfare rolls, first in the number of totally disabled on these rolls, and first in the number of tax supported hospital beds. We, as physicians, have little chance to change these doubtful distinctions, but we can do something about the polio problem in our state. Less than half of the age group birth to 19 in Louisiana have had one or more injections of poliomyelitis vaccine, and in the age group 20 to 40 the number is negligible of those who have been vaccinated.

Considering the risk involved in facing the polio hazard unassisted, and the simplicity of acquiring adequate protection, the medical profession should be able to influence the public to avail itself of this protection speedily and with an appreciative understanding.

Reactions are rare and trivial in their effect. The cost to private patients is minimal, especially when compared to the protection afforded. Several state asso-

ciations have already, on their own initiative, undertaken campaigns. Many county societies have done likewise, and numerous campaigns are in process now. In these several endeavors the forces of organized medicine have undertaken to supply leadership, guidance, and direction. The actual execution and details of administration are in the hands of local societies. The campaigns that have been most effective have been those in which the assistance of all interested parties was sought and as many obtained as possible. Many groups and organizations only realized they were interested parties after the advantages were explained to them.

Physicians as a group spend much of their lives treating conditions which, if they had known they were going to develop in their patients, they could not have prevented. This now is a situation in which America's physicians, in cooperation with public spirited citizens of the communities, have the power to prevent disease. About 15,000 cases of paralysis may be reasonably expected to develop in the current year, unless the forthcoming campaign is enthusiastically supported and properly effective.

The time to start is now. The experience in the Chicago epidemic indicates that it is safe to give the vaccine in the face of an epidemic and with the expectation of being able to control the epidemic.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

1957 ANNUAL MEETING Committees on Arrangements

Below are listed the Advisory Committee and chairmen of special committees incident to arrangements for the 1957 Annual Meeting who have been appointed by the General Chairman, Dr. J. O. Weilbaecher, Jr. These doctors should be contacted for information pertaining to various phases of the meeting.

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M. D., vice-chairman; Horace Dozier, M. D., Pat Hanley, M. D., John T. Leckert, M. D., M. L. Michel, M. D., Edmond Mickal, M. D., Ben Morrison, M. D., and Edward Nelson, M. D.

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John Menville, M. D., Chairman; L. J. O'Neil, M. D., Vice-Chairman; William McD. Boles, M. D., Dennis H. Groome, M. D., Ben Phillips, M. D., I. L. Robbins, M. D., R. M. Willoughby, M. D., Frank Gomila, Jr., M. D. and Manuel Gardberg, M. D.

FINANCE

George H. Hauser, M. D., Chairman; Eugene Vickery, M. D., Vice-Chairman; James M. Ciarravella, M. D., Walton R. Akenhead, M. D., Jack S. George, M. D., John J. Irwin, M. D., Abe Mickal, M. D., John L. Kron, M. D., and Dan W. Beacham, M. D.

GOLF

Wm. C. Rivenbark, M. D., Chairman; Joseph Vella, Vice-Chairman; Irvin Cahen, M. D., Dean Echols, M. D., Louis Monte, M. D., Charles B. Odom, M. D., Percy Phillips, M. D., J. Kelley Stone, M. D., and Jack Strange, M. D.

HOSPITALS

Robert Gillaspie, M. D., Chairman; Edmond Mickal, M. D., Vice-Chairman; Wm. W. Frye, M. D., M. E. Lapham, M. D., Malcolm P. Schwarzenbach, M. D., Ben F. Parker, M. D., Jack Anderson, M. D., T. L. L. Soniat, M. D., C. M. Johnson, M. D., Fred King Vaughan, M. D., Leslie Mundt, M. D., and Anees Mogabgab, M. D.

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LANTERNS

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LUNCHEES

E. J. Joubert, M. D., Chairman; Joseph J. Ciolino, M. D., Vice-Chairman; George C. Battalora, M. D., C. C. Blakeney, M. D., Joseph N. Ane, M. D.,

I. L. Fontinelle, M. D., Carroll F. Gelbke, M. D., J. A. Colclough, M. D., and Murrell H. Kaplan, M. D.

PUBLICITY

Raphael Sanchez, M. D., Chairman; Charles J. Wheeler, M. D., Vice-Chairman; Nicholas J. Chetta, M. D., W. P. Gardiner, M. D., Daniel W. Goldman, M. D., Frank S Oser, Jr., M. D., Frederick Pou, M. D., Harry Zengel, Jr., M. D., and Howard Mahorner, M. D.

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SCIENTIFIC EXHIBITS

Henry D. Ogden, M. D., Chairman; George M. Haik, M. D., Vice-Chairman; Lawrence G. Bole, M. D., Fred F. Boyce, M. D., Lyon K. Loomis, M. D., Edward deS. Matthews, M. D., Oscar Blitz, M. D., Albert Segaloff, M. D., and Henry M. Duhe, M. D.

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Harry Meyer, M. D., Chairman; Harold M. Horack, M. D., Vice-Chairman; Roger J. Mailhes, M. D., George J. Taquino, Jr., M. D., Wallace J. Landry, M. D., Homer J. Dupuy, M. D., D. V. Longo, M. D., Everett L. Drewes, M. D., and Waldo Treuting, M. D.

TECHNICAL EXHIBITS

J. Theo Brierre, M. D., Chairman; Joseph V. Gregoratti, M. D., Vice-Chairman; John Garcia, M. D., Joseph P. Palermo, M. D., E. Garland Walls, M. D., Louis J. Gehbauer, M. D., Marie Dees Mattingly, M. D., Carl H. Rabin, M. D., and Charles R. Robinson, M. D.

TRANSPORTATION

C. J. Brown, M. D., Chairman; James C. Burns, M. D., Vice-Chairman; Suzanne Schaefer, M. D., Charles Midlo, M. D., Hanckes A. Klein, M. D., Evelyn B. Nix, M. D., John J. Davis, M. D., Walter H. Brent, M. D., and J. Morgan Lyons, M. D.

WOMAN'S AUXILIARY

Abe Golden, M. D., Chairman; Boni DeLaurel, M. D., Vice-Chairman; George H. Hauser, M. D., Robert C. Kelleher, M. D., Louis Leggio, M. D., Robert Rougelot, M. D., and Edwin A. Socola, M. D.

IMPORTANT NOTICE

Members who are in need of insurance blanks concerning services rendered members of the Uniformed Armed Services authorized under the "Medicare Plan", Public Law 569, can obtain said blanks by writing the Continental Service Life and Health Insurance Company, our Fiscal Administrator for the state of Louisiana. Your bills should also be sent to this company at Baton Rouge, Post Office Drawer 2908.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

POLIOMYELITIS VACCINATION URGED

Louisiana had its third worst polio year in 1956 with the bulk of the cases being in non-vaccinated individuals. The United States, as a whole, had fewer reported cases of poliomyelitis in 1956 than in any year since 1947. The four states with the highest 1956 rates were Utah, Iowa, Louisiana and Illinois respectively. Of all of the states, Louisiana was the only state whose 1956 rate was greater than the preceding 5 year median. The rate for 1956 for the United States was 9.2 cases while for Louisiana it was 21 cases per 100,000 population.

In 1956, 606 cases of poliomyelitis were reported to the State Department of Health; 88 were in persons who had received one or more injections of poliomyelitis vaccine and 518 were in non-vaccinated individuals. Only 22 persons who received one, 18 who received two and no persons who received three injections of poliomyelitis vaccine developed paralytic poliomyelitis, while 372 non-vaccinated persons developed paralytic poliomyelitis.

There are about 1,050,000 persons in the age group birth through 19 years in Louisiana. Between April 1954 and December 31, 1956 about 470,000 of these received one or more injections of poliomyelitis vaccine provided by the State Department of Health; 580,000 persons in this critical age group need to be vaccinated. An additional 80,000-90,000 children born each year in Louisiana as well as all persons in the age group 20 to 40 years and all pregnant women need the protection against paralytic poliomyelitis which vaccination will afford them.

Poliomyelitis vaccination is a safe and effective way of preventing paralytic poliomyelitis. In 1956 over 70 million inoculations were given in the United States including 778,845 in Louisiana with no severe reactions reported in Louisiana and only 8 in the United States, and it is ques-

tionable, at this time, whether these 8 related to prior vaccination.

A report from the Public Health Service Communicable Disease Center Poliomyelitis Surveillance Unit issued January 26, 1957 shows the frequency of paralysis among reported cases in the under 20 year age group to be markedly lower among vaccinated cases than among unvaccinated cases. The report further states that the vaccine has an effectiveness of the order of 75% against paralytic poliomyelitis.

The state is just over one of the worst poliomyelitis years in its history. The polio year starts in Louisiana between April 15 and June 1, and runs until about November 1 with the maximum number of cases being reported in mid July.

About two thirds of those in the critical groups who will be exposed to poliomyelitis are still unvaccinated in Louisiana. The vaccine is proven to be a safe and effective means of preventing the crippling effects of paralytic poliomyelitis in 3 out of 4 persons who would otherwise be paralyzed. The 1957 polio year is just 3 months away. Every effort should be exerted at this time to immunize all persons up to 40 years of age and all pregnant women as quickly as possible so that they will have the greatest amount of protection available against paralytic poliomyelitis before the 1957 polio year starts.

VENEREAL DISEASE SEMINAR

The Eighth Annual Symposium on Recent Advances in the Study of Venereal Diseases will be held on April 24 and 25, 1957, in the auditorium of the Health, Education, and Welfare Building, Washington, D. C. The sessions will be open to all interested physicians and to workers in allied fields.

This Symposium will follow a Venereal Disease Seminar for public health personnel of 15 surrounding States beginning April 23. Brief reports from Seminar workshop groups will be in-

cluded on the Symposium program of April 24.

Final abstracts must be received by March 1, not exceeding 500 words, should include authors' names and addresses in full, and authors' institutional connections in the form preferred by the institution. Space limitations prevent program listing of institutional subsidiaries.

When submitting final abstracts, contributors should state the number and size of projection slides expected to be used. Sizes are limited to $3\frac{1}{4} \times 4$, $3\frac{1}{4} \times 3\frac{1}{4}$, and 2×2 .

BAHAMAS MEDICAL CONFERENCE

The Bahamas Branch of the British Medical Association will hold a Medical Conference during the week after Easter, April 23-30, 1957, at the British Colonial Hotel and the Princess Margaret Hospital in Nassau.

Hotel reservations should be made as early as possible by writing directly to Mr. Robert K. Holiday, Reservations Manager, British Colonial Hotel, Nassau, Bahamas, and by sending at the same time the registration fee of \$75.00.

Interesting lectures and clinics have been planned, as well as ample time for recreational activities. Inoculations are not required and Americans do not need passports, only evidence of citizenship.

REGIONAL MEETING OF THE AMERICAN COLLEGE OF GASTROENTEROLOGY

A regional meeting of the Central Region of the American College of Gastroenterology will be held in Grand Rapids, Mich., Sunday afternoon, 17 March 1957. The Scientific Sessions will be at the Hotel Pantlind commencing at 1:45 P.M.

Participating in the program will be Joseph B. Kirsner, M.D., Chicago, Ill.; William Fuller, M.D., Grand Rapids, Mich.; Joseph Shaiken, M.D., F.A.C.G., Milwaukee, Wisc.; C. Wilmer Wirts, M.D., F.A.C.G., Philadelphia, Pa.; Garnet Ault, M.D., Washington, D. C.; Don W. McLean, M.D., Detroit, Mich.; Frederick A. Collier, M.D., Ann Arbor, Mich.; Fred Hodges, M.D., Ann Arbor, Mich. and C. Allen Payne, M.D., Grand Rapids, Mich.

Members of the medical profession are cordially

invited to attend. A copy of the program may be obtained from the Secretary, American College of Gastroenterology, 33 West 60th Street, New York 23, N. Y.

AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS

The Fifth Annual Interim Meeting of District VII of The American College of Obstetricians and Gynecologists will be held at the new Statler-Hilton Hotel, Dallas, Texas, April 12-13, 1957.

A two day program has been planned, consisting of scientific papers, unusual case reports, diagnostic and treatment clinics and a king-size round table.

The College banquet, with entertainment to follow, will be held on Friday evening, April 12.

Wives are invited.

Doctor William P. Devereux, of Dallas, is Chairman of the Local Arrangements Committee.

MEDICAL PROGRAM COMBINES WITH SOUTH DAKOTA PHEASANT HUNTING

The Hunter's Fall Medical Meeting sponsored by South Dakota State Medical Association will be held at Mitchell, South Dakota during the first five days of pheasant hunting season in October, 1957.

The program is set up for out-of-state doctors and will feature morning scientific sessions, afternoon hunting and evening scientific and social sessions.

The registration fee is set at \$100.00 which will cover the out-of-state hunter's license, hunting guides, reserved hunting areas, several social events, and the scientific program. Motel and hotel space has been reserved, but registration is limited to the available housing.

The affair is not stag, but wives who hunt must pay the full registration fee and those not hunting, three-fourths of it. (This is necessitated by the tight housing situation.)

For details and reservations write to Mr. John C. Foster, Executive Secretary, South Dakota State Medical Association, 300 First National Bank Bldg., Sioux Falls, South Dakota.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

ORLEANS PARISH

New members acted as models in the period Style Show presented Wednesday, January 9th, at the Orleans Club, by the Woman's Auxiliary to the Orleans Parish Medical Society. Mrs. A. Dallam O'Brien commented on the show, which featured clothes worn from the twenties to the Gibson Girl era. Mrs. J. M. Ciaravella was the pianist.

Dr. George Hauser, the newly elected Orleans

Parish Medical Society president addressed the group.

In the receiving line were the Auxiliary's officers: Mms. Abe Golden, president, E. H. Countiss, president elect, William J. Rein, first vice-president, Branch J. Aymond, second vice-president, Edwin S. Kagy, third vice-president, Albert F. Habeeb, fourth vice-president, O'Neil Pollingue, recording secretary, Philip P. LaBruyere, treasurer, Mannie Mallowitz, corresponding secretary,

Monte Meyer, Parliamentarian, and Robert E. Rougelot, past president.

Hostesses for the afternoon were Mms. Fred

O. Brumfield, John Dubret, Franh S. Oser, Jr., Frank L. Faust, John W. Atkinson, Joseph J. Ciolina and Charles Farris.

BOOK REVIEWS

Clinical Roentgenology: Volume III; The Lungs and the Cardiovascular System, Emphasizing Differential Considerations; by Alfred A. DeLorimer, M. D., Henry G. Moehring, M. D., and John R. Hannan, M. D., Springfield, Illinois, Charles C Thomas, 1955, Pp. 512, illus. 760, Price \$20.50.

This is the third volume of a four volume set by noted authors. This book is devoted to the thorax and its contents. The larger divisions include the following: thorax, diaphragms, mediastinum, pleura, lung, mediastinal tumors, heart and great vessels, congenital malformations of the heart and great vessels, acquired heart disease, cardiac trauma, cardiac failure, tumors and cysts of the heart and pericardium, pericarditis and the aorta.

After preliminary discussions of embryology, anatomy and technical considerations each major division is subdivided into its component structures and individual clinical abnormalities and pathological conditions. These are considered individually under the headings: General Considerations, Roentgen Manifestations, Clinical Corroborations, Sources of Error and Differential Considerations. References are included at the end of the subdivisions. The index is complete. Numerous differential diagnostic tables are included which consider x-ray findings such as, pulmonary cavities and pseudo cavities, pulmonary nodules, prominent pulmonary marking, segmental pulmonary densities and elevation of the diaphragm.

The outstanding features of this book are the excellence and the large number of illustrations which have been included. The reproductions are unusually large and are in the original x-ray negatives. Five illustrations are shown in color. Multiple views are included of most abnormalities.

The clinical discussions are valuable in understanding the roentgen manifestations of pathology. The technical discussions are adequate and clear. The text is excellent and easily read. As a whole, this volume is a valuable contribution to the available literature on the subject of the thorax and the structures of the thorax. All physicians who have contact with thoracic diseases will find this book a valuable, comprehensive and readily available work of reference.

J. N. ANÉ, M. D.

Cardiovascular Surgery: Studies in Physiology, Diagnosis and Techniques; by Conrad R. Lam,

M. D. (ed.), Philadelphia, Pa., W. B. Saunders, 1955. Pp. 543, Price \$12.75.

This is a concise record of a unique event in the history of cardiovascular surgery. Sixty-one participants and seventeen discussants from all the leading centers in this country, and seven foreign countries, collaborated at the invitation of the Henry Ford Hospital, Cleveland, in March, 1955.

No attempt is made to cover the entire field of cardiovascular surgery but practically all fields in which active progress is being made are considered.

An initial chapter deals with developments in special diagnostic techniques. There are chapters discussing the physiology and surgical treatment of pulmonary stenosis, mitral valvular disease, aortic valvular disease, septal defects, cardiac arrest, hypothermia, and diseases of the aorta.

There is also a very interesting discussion of adjustments between the systemic and pulmonary circulation from the anatomic, pathologic, and clinical aspects.

Cross-circulation and related techniques are discussed but there is no general discussion of methods of extra corporeal oxygenation.

This symposium brings the reader up to date on developments in this active field to the spring of 1955, and is required reading for all actively interested in the field, and is a valuable source of composite opinion for the casual reader.

PAUL DECAMP, M. D.

PUBLICATIONS RECEIVED

Grune & Stratton, Inc., N. Y.: *Micro-Analysis in Medical Biochemistry*, by E. J. King, Ph.D., and I. D. P. Wootton, Ph.D.; *Cytologic Technics for Office and Clinic*, by H. E. Nieburgs, M. D.; *Fundamentals of Clinical Fluoroscopy* by Charles B. Storch, M. D., (2nd edit.).

Charles C Thomas, Publisher, Springfield, Ill.: *Lesions of the Cervical Intervertebral Disc*, by R. Glen Spurling, M. D.; *Manual of Anesthesiology for Residents and Medical Students*, by Herman Schwartz, M. D., S. H. Ngai, M. D., and E. M. Papper, M. D., and edited by John Adriani, M.D.; *The Recurrent Laryngeal Nerves in Thyroid Surgery*, by William H. Rustad, M.D.

Vantage Press, Inc., N. Y.: *The Patient Speaks*, by Harold A. Abramson, M. D.

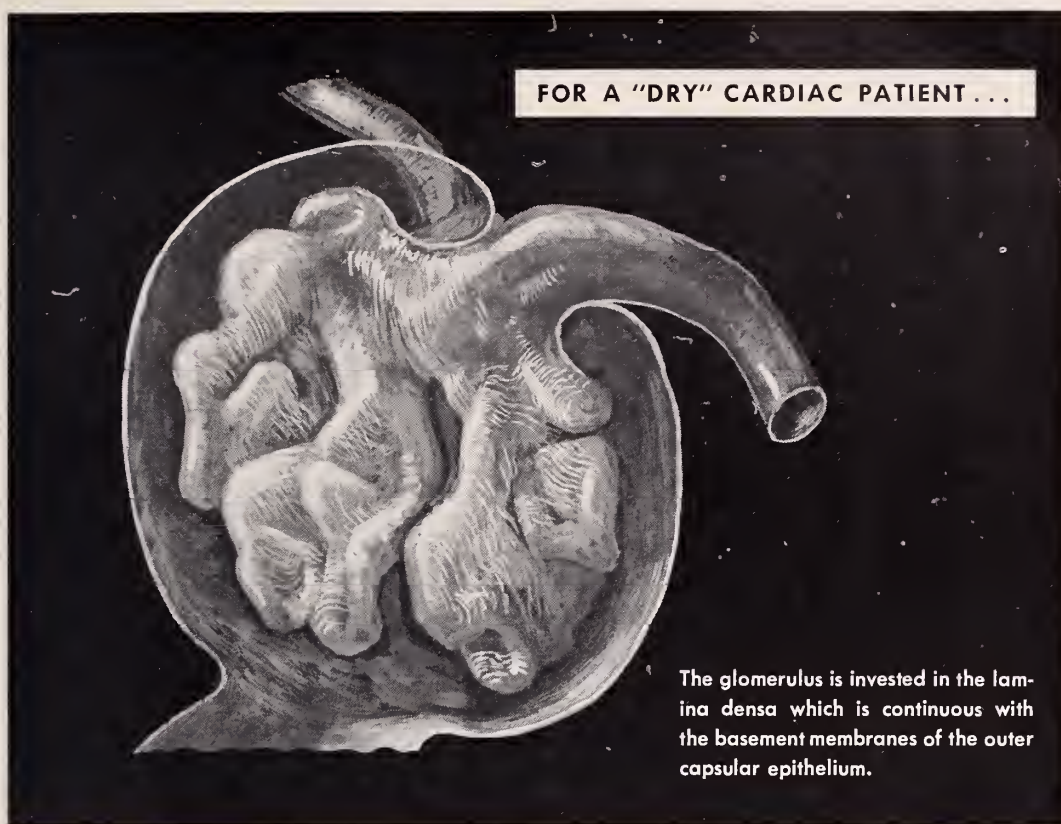


Illustration by Hans Elias

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G. D. Searle & Co., Chicago 80, Illinois.
Research in the Service of Medicine.

1. Asher, G.: Personal communication, June 23, 1956.
2. Settel, E.: A Clinical Evaluation of a New Oral Diuretic, Rolicton, Postgrad. Med., Feb. 1957, in press.
3. Goldner, M. G.: Personal communication, June 29, 1956.

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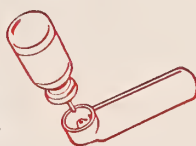


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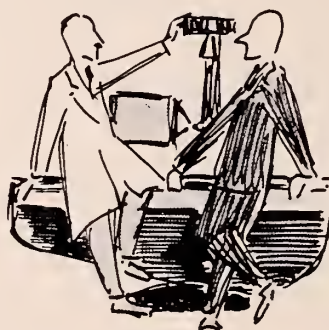
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He might even touch on the peace-of-mind that comes of having a local Picker office so near, with a trained Picker expert always on call for help and counsel



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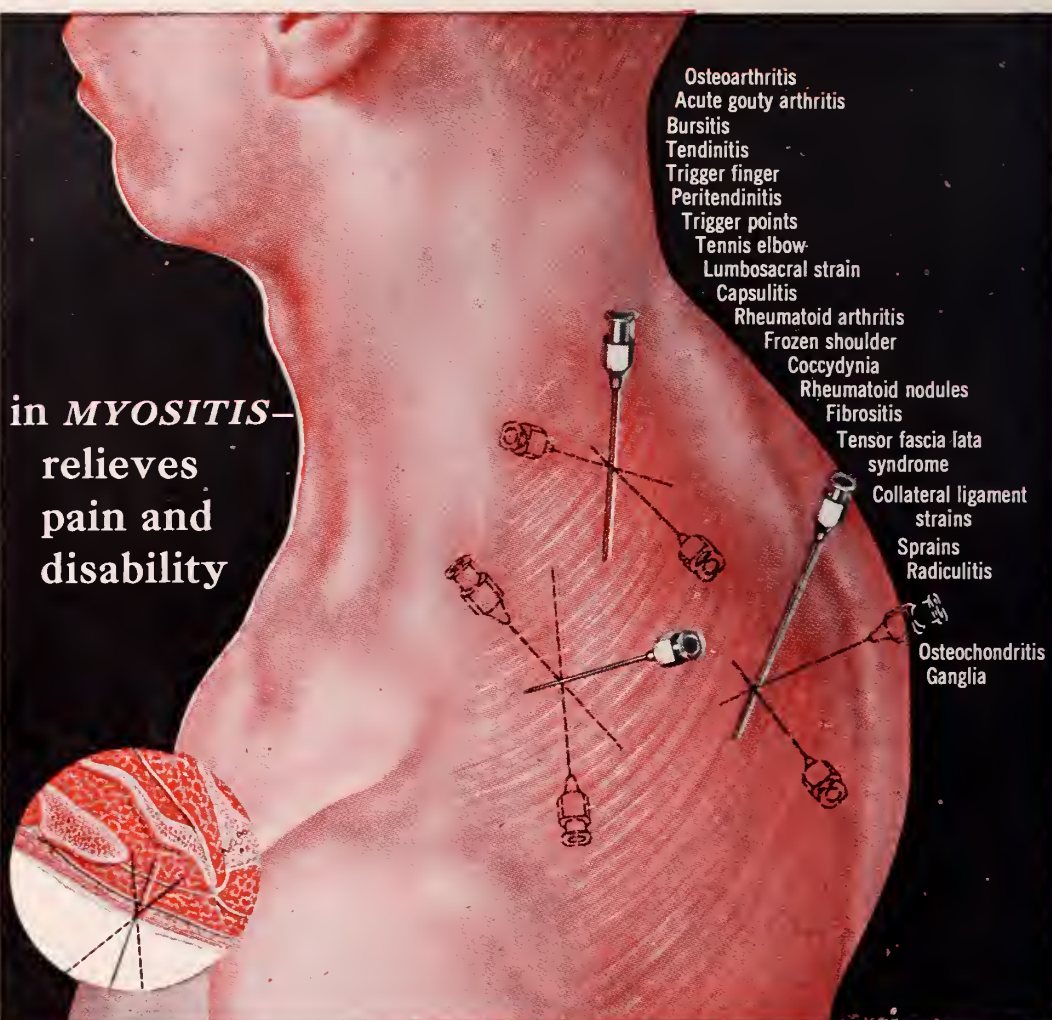
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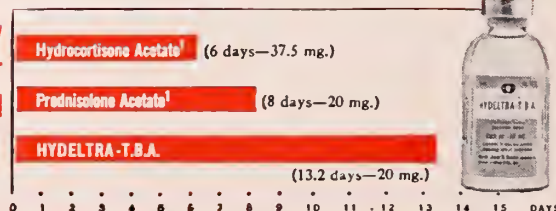
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effect lasts longer
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*Uses of Wine in Medical Practice, published by Wine Advisory Board, 717 Market Street, San Francisco, California.

1. Goetzl, F.R.: Permanente Found. M. Bull. 8:72 (April) 1950.

2. Irvin, D.L., and Goetzl, F.R.: Permanente Found. M. Bull. 9:119 (Oct.) 1951.

3. Irvin, D.L.; Durra, A., and Goetzl, F.R.: Am. J. Digest. Dis. 20:17 (Jan.) 1953.

4. Goetzl, F.R.: A Note on the Possible Usefulness of Wine in the Management of Anorexia, unpublished.



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HOW VAGISEC LIQUID PENETRATES RECESSES OF VAGINA AND EXPLODES TRICHOMONADS OFTEN MISSED

Photomicrograph of section of epithelium of normal vaginal mucosa, enlarged 750 times, shows uneven surface where trichomonads bide. VAGISEC penetrates surface and explodes organisms in hard-to-reach areas.

TOO OFTEN AN ORDINARY trichomonacide fails to cure vaginal trichomoniasis because it has little or no effect on parasites that are not on the surface.¹ Trichomonads burrowed deeply into the roughened mucosa survive and set up new foci of infection. In fact, even a few hidden trichomonads remaining after treatment can cause acute exacerbations. With VAGISEC® liquid and jelly you can overcome this most troublesome problem.

Penetrates thoroughly—This new and unique trichomonacide spreads out and wets the entire vaginal surface. It rapidly dissolves mucinous materials, fats and blood clots.¹ It penetrates the cellular debris that lines the vaginal walls and shields the parasites, reaching trichomonads deep in their hiding places.

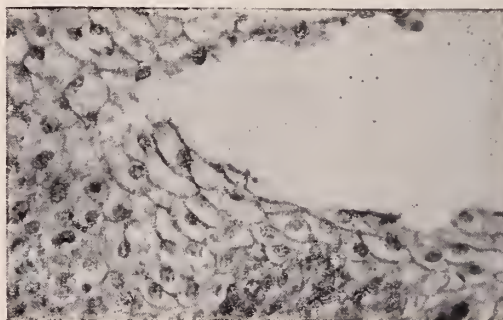
Explodes trichomonads—VAGISEC liquid actually explodes trichomonads within 15 seconds after douche contact.² Two surface-acting agents and one chelating agent combine to weaken the cell membrane, to remove the waxes and lipids, and to denature the protein. With its cell wall destroyed, the parasite imbibes water, swells and explodes. All this occurs within 15 seconds. Only scattered fragments remain.

Proves highly effective—With the Davis technique you can now rid patients of "trich," even cases that have resisted other treatment. VAGISEC liquid was developed as "Carlendacide," by Dr. Carl Henry Davis, M.D., noted gynecologist and author, and C. G. Grand, research physiologist.¹ Clinical trials by more than 150 physicians show better than 90 per cent success.³

Use liquid and jelly—In the Davis technique, VAGISEC liquid is used in office therapy. At the same time, liquid and jelly are prescribed for home use. They are well tolerated, leave no messy discharge or stain.

Office treatment—Expose vagina with speculum and wipe walls dry with cotton balls. Then wash thoroughly with a 1:100 dilution of VAGISEC liquid. Remove excess fluid with cotton balls. Dr. Davis recommends six treatments.

Home treatment—Patient douches with VAGISEC liquid every night or morning and then inserts VAGISEC jelly. Home treatment is continued through two menstrual periods, but omitted on office treatment days. Douching contraindicated in pregnancy.



One course of treatment—"If the treatment has been accomplished as directed," the patient "will have no flagellates provided the infection was limited to the vaginal canal . . . A few women have infected cervical, vestibular or urethral glands and require other types of treatment."⁴ Continued douching with VAGISEC liquid two or three times each week for eight to twelve weeks helps prevent re-infection.

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Active ingredients in VAGISEC liquid: Polyoxyethylene nonyl phenol, Sodium ethylene diamine tetra-acetate, Sodium dioctyl sulfosuccinate. In addition, VAGISEC jelly contains Boric acid, Alcohol 5% by weight.


References: 1. Davis, C. H., and Grand, C. G.: *Am. J. Obst. & Gynec.* 68:559 (Aug.) 1954. 2. Davis, C. H.: *J.A.M.A.* 157:126 (Jan. 8) 1955. 3. Davis, C. H.: *West. J. Surg.* 63:53 (Feb.) 1955. 4. Davis, C. H. (Ed.): *Gynecology and Obstetrics* (revision), Hagerstown, W. F. Prior, 1955, vol. 3, chap. 7, pp. 23-33. 5. Lanceley, F., and McEntegart, M. C.: *Lancet* 1:668 (Apr. 4) 1953.

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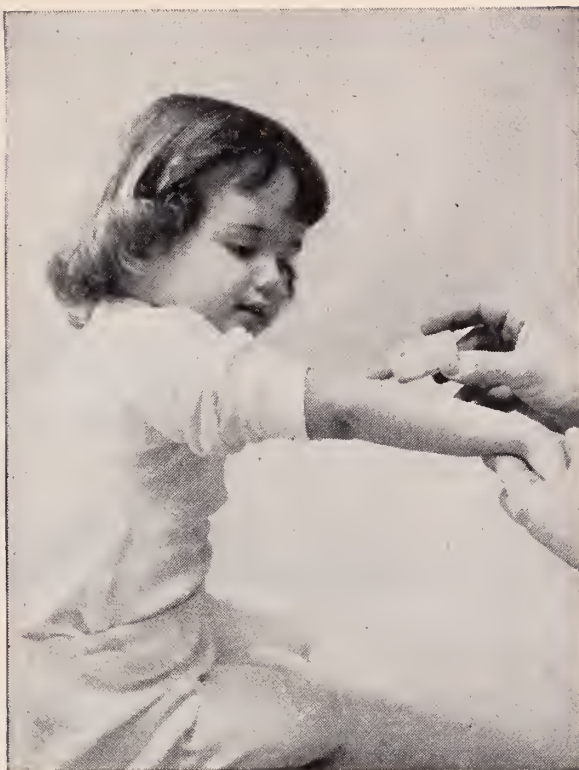
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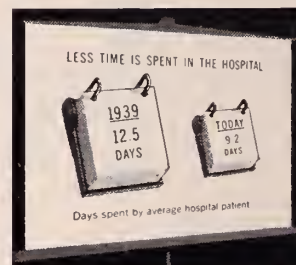
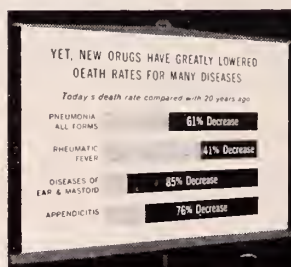
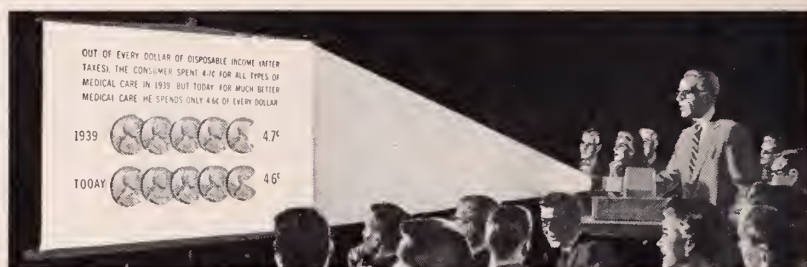
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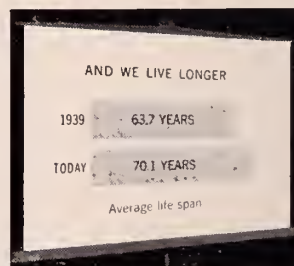
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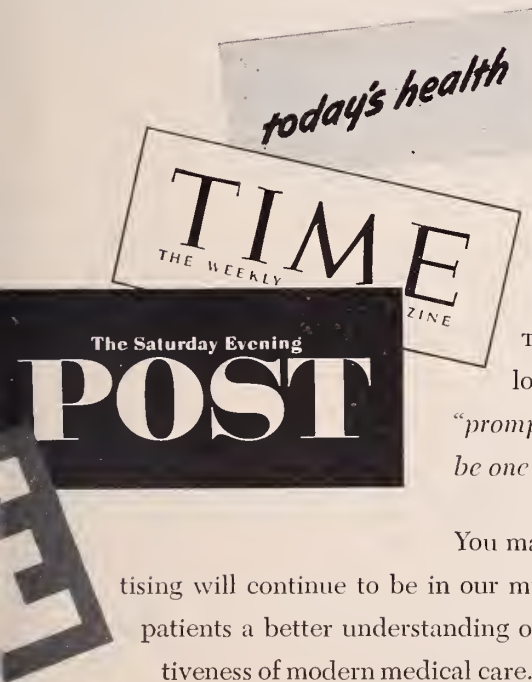


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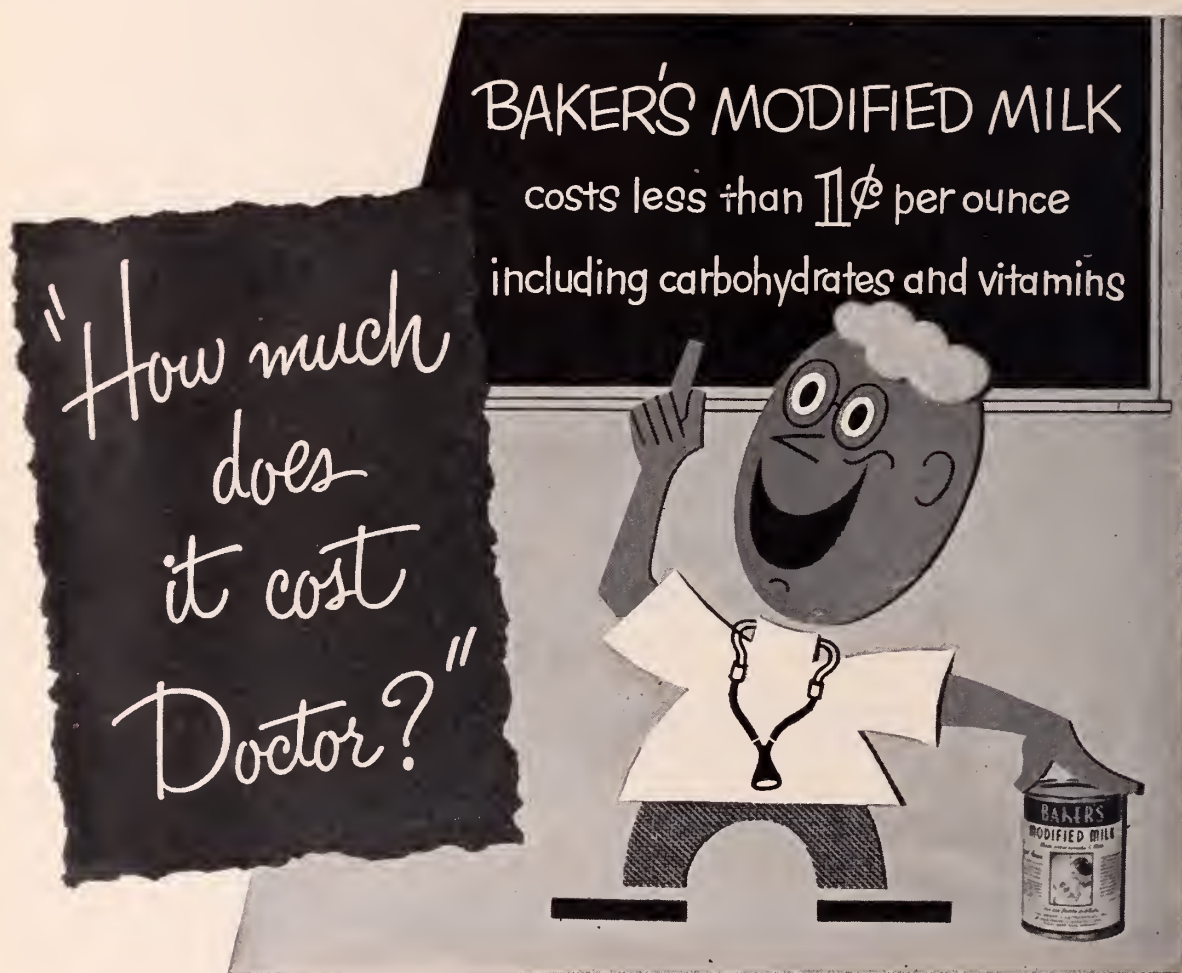
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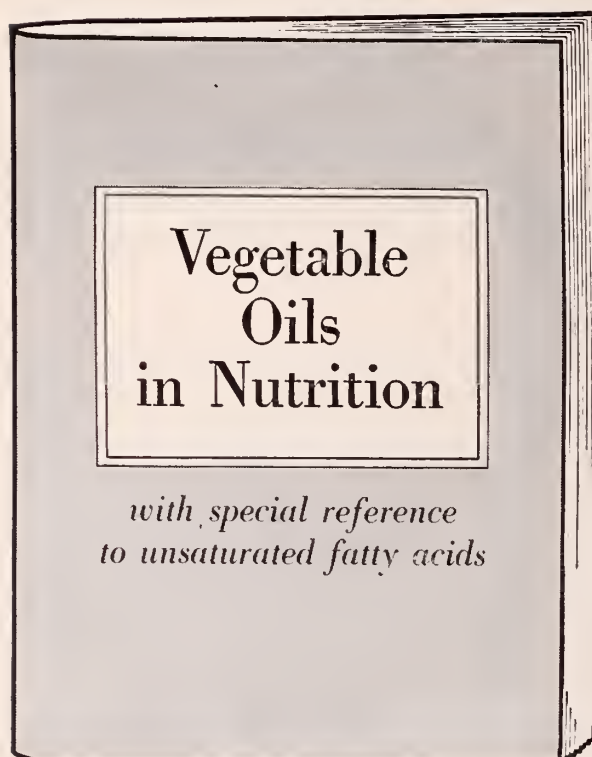
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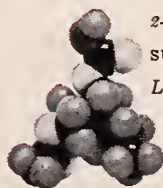
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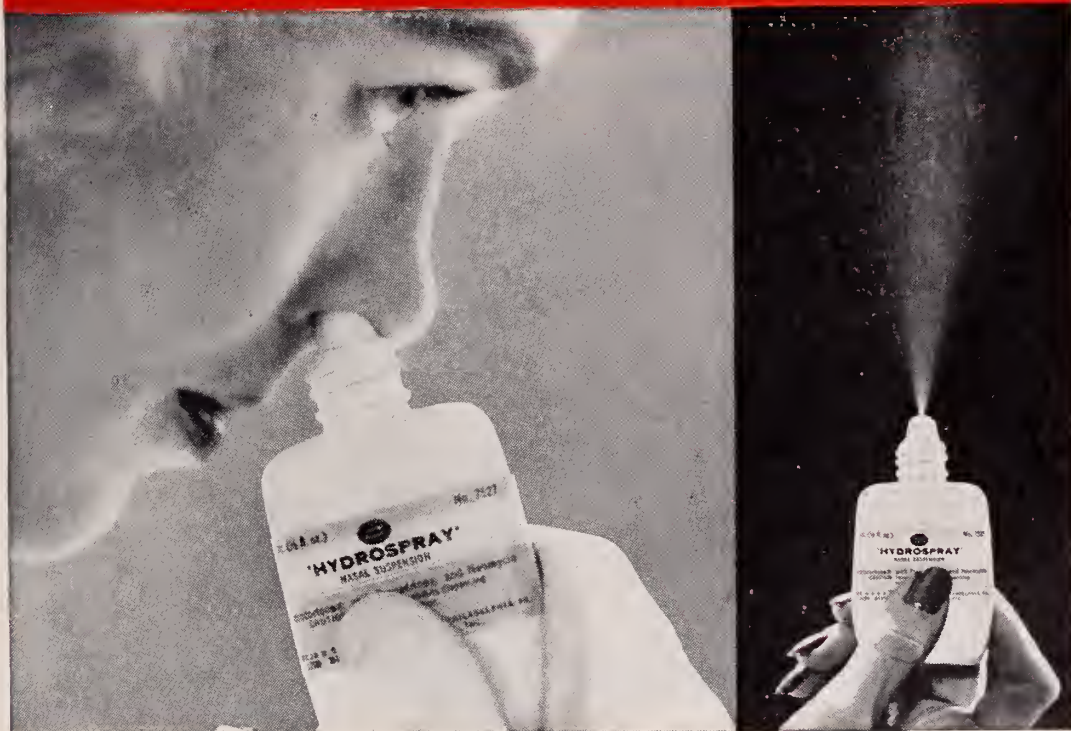
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REFERENCE: 1. Silcox, L. E., *A.M.A. Arch. Otolaryng.* 60:431, Oct. 1954.

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*“cell examination
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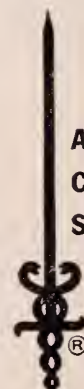
Cytologic cervical test is a term which seems complicated to many women.

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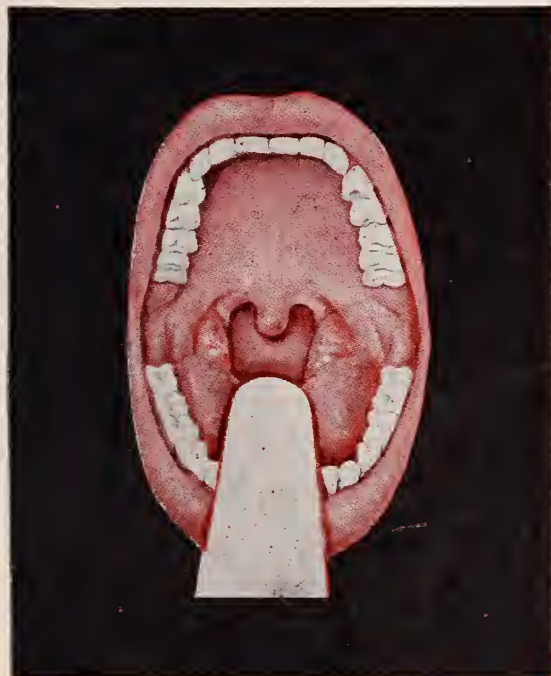
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1. Carter, C. H., and Maley, M. C.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 51.

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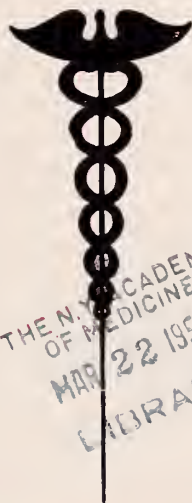
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About a third of the people of Louisiana who need protection against paralytic polio have received Salk vaccine shots.

Because of the lag in vaccinations, and because the mild winter may advance the start of the 1957 polio season in Louisiana, (normally between April 1 to June 15), the State Department of Health urges immediate vaccination for all persons to age 40.

The 1956 polio season was the third worst in Louisiana's history. The worst hit areas in the state were those where the fewest people had been vaccinated. It probably would have been much worse if about a third of our citizens had not been protected by Salk vaccine.

The evidence for the safety and effectiveness of Salk vaccine is overwhelming. In 1956 over 70 million polio inoculations were given in the United States. There were only 8 severe reactions which might have been related to the vaccine. In Louisiana, 804,567 inoculations were given with no severe reactions. We know that paralysis can be prevented in three out of four persons who are infected with the disease. In other words, polio vaccination is at least 75% effective against paralytic polio.

The Louisiana State Health Department has been advised that the Public Health Service does not plan to ask for an extension of the Poliomyelitis Vaccination Assistance Act which expires June 30, 1957. Until the expiration date, parish health units are authorized to give free Salk vaccine inoculations to persons 19 years of age and under, and to pregnant women. Persons 20 years of age and older are being urged to see their private physicians for vaccination.



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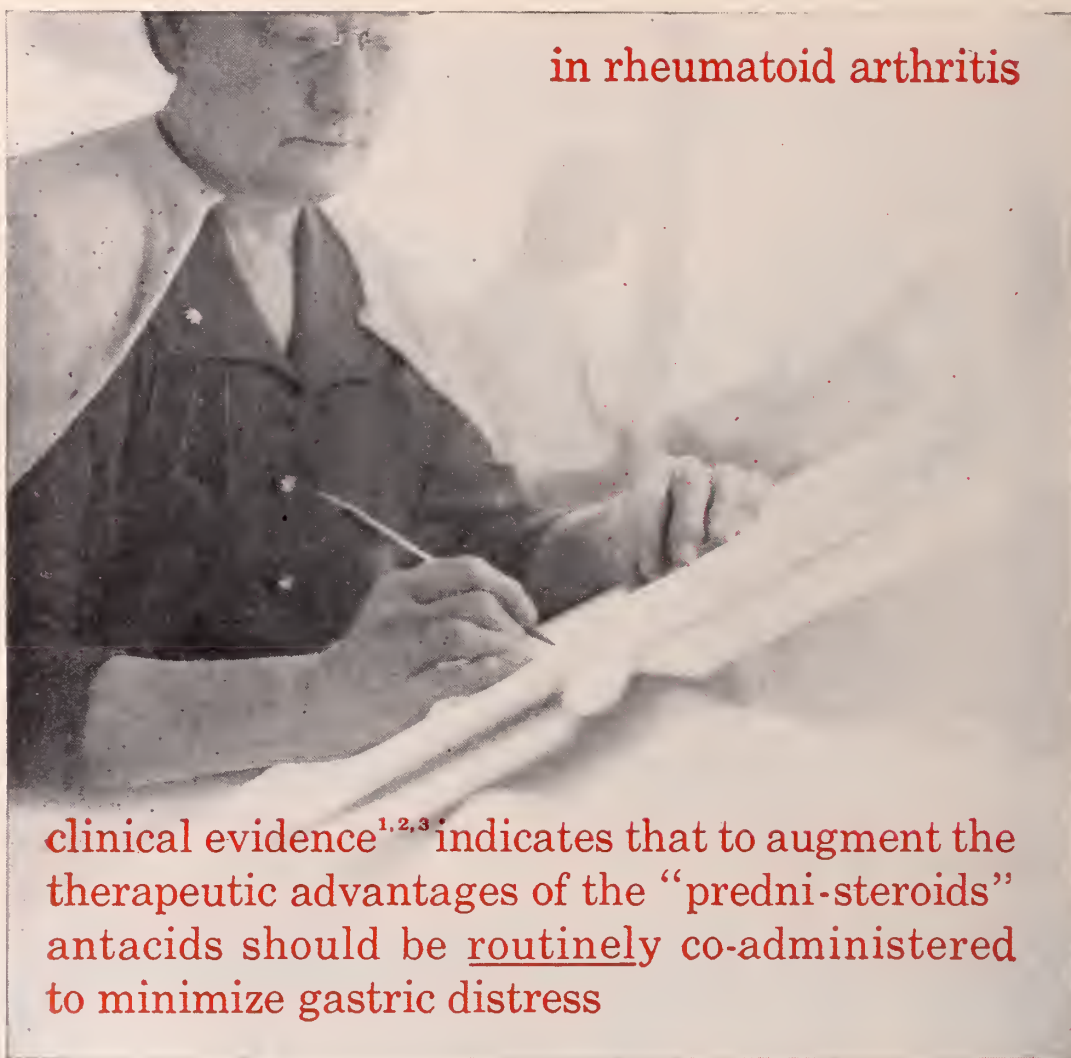
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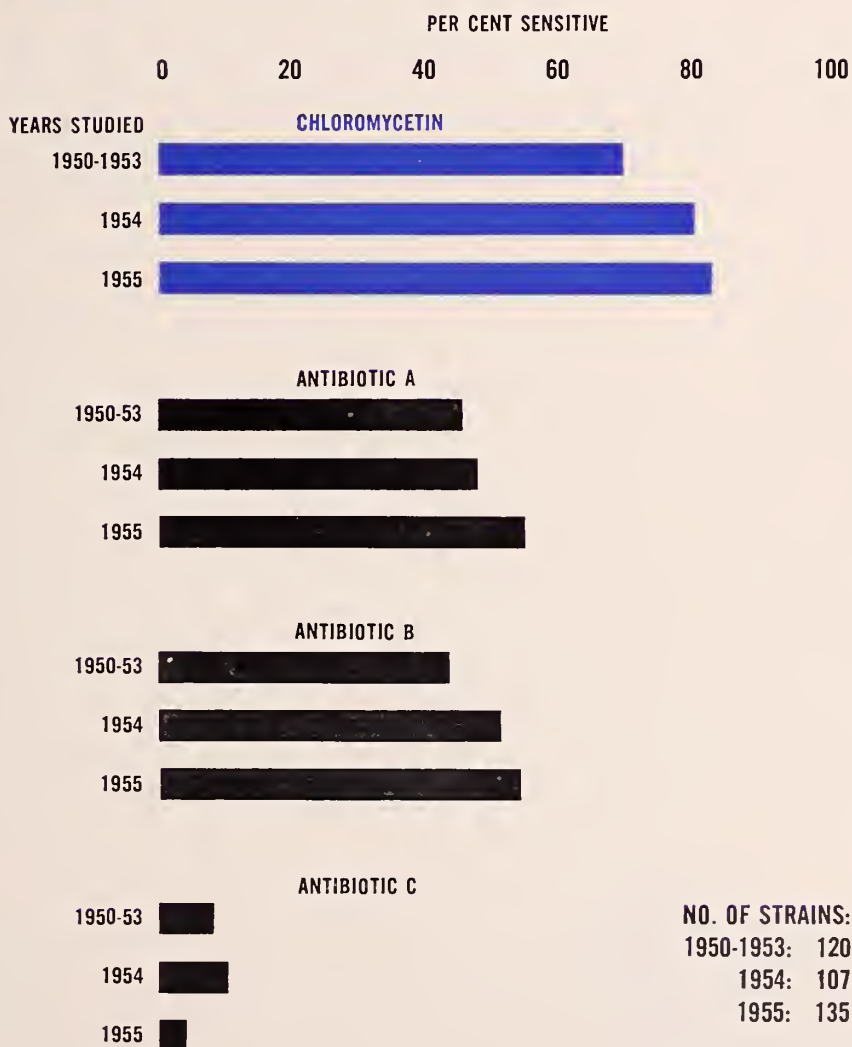
- (1) Altmeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elston, W., & Fultz, C. T.: *J.A.M.A.* 157:305, 1955. (2) Pratt, R., & Dufrenoy, J.: *Texas Rep. Biol. & Med.* 12:145, 1954. (3) Kutscher, A. H.; Seguin, L.; Lewis, S.; Piro, J. D.; Zegarelli, E. V.; Rankow, R., & Segall, R.: *Antibiotics & Chemother.* 4:1023, 1954. (4) Knight, V., & Holzer, A. R.: *J. Clin. Invest.* 33:1190, 1954. (5) Kenney, M.; Johnson, R. M., & Tatz, J. S.: *Antibiotics & Chemother.* 3:1221, 1953. (6) Wise, R. I.: *Minnesota Med.* 37:857, 1954. (7) Clapper, W. E.; Wood, D. C., & Burdette, R. I.: *Antibiotics & Chemother.* 4:978, 1954. (8) Weil, A. J., & Stempel, B.: *Antibiotic Med.* 1:319, 1955. (9) Tehrock, H. E., & Young, W. N.: *New York J. Med.* 55:1159, 1955. (10) Branch, A.; Starkey, D. H.; Rodgers, K. C., & Power, E. E., in Welch, H., & Marti-Ibáñez, F.: *Antibiotics Annual, 1954-1955*, New York, Medical Encyclopedia, Inc. 1955, p. 1125. (11) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* 5:365, 1955. (12) Sanford, J. P.; Favour, C. B., & Mao, F. H.: *J. Lab. & Clin. Med.* 45:540, 1955. (13) Kass, E. H.: *Am. J. Med.* 18:764, 1955. (14) Munroe, D. S., & Cockcroft, W. H.: *Canad. M. A. J.* 72:586, 1955. (15) Welch, H.: *Antibiotic Med.* 1:59, 1955. (16) Bunn, P. A.; Canarile, L., & Eastman, G.: *New York J. Med.* 55:3607, 1955. (17) Murphy, F. D., & Waishren, B. A., in Murphy, F. D.: *Medical Emergencies: Diagnosis and Treatment*, ed. 5, Philadelphia, F. A. Davis Company, 1955, p. 557. (18) Horton, B. E., & Knight, V.: *J. Tennessee M. A.* 48:367, 1955. (19) Perry, R. E., Jr.: *North Carolina M. J.* 16:567, 1955. (20) Kempe, C. H.: *California Med.* 84:242, 1956. (21) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956.



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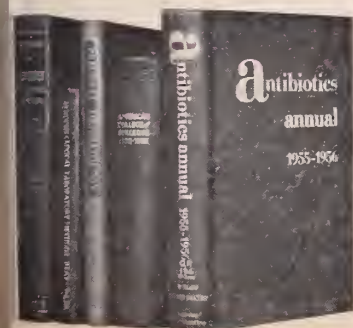
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1. Romansky, M.J., et al., *Antibiotics Annual 1955-1956*, p. 48.
2. Waddington, W. S., Maple, F. C., and Kirby, W. M. M., *A.M.A. Archives of Internal Medicine*, 1954, p. 556.



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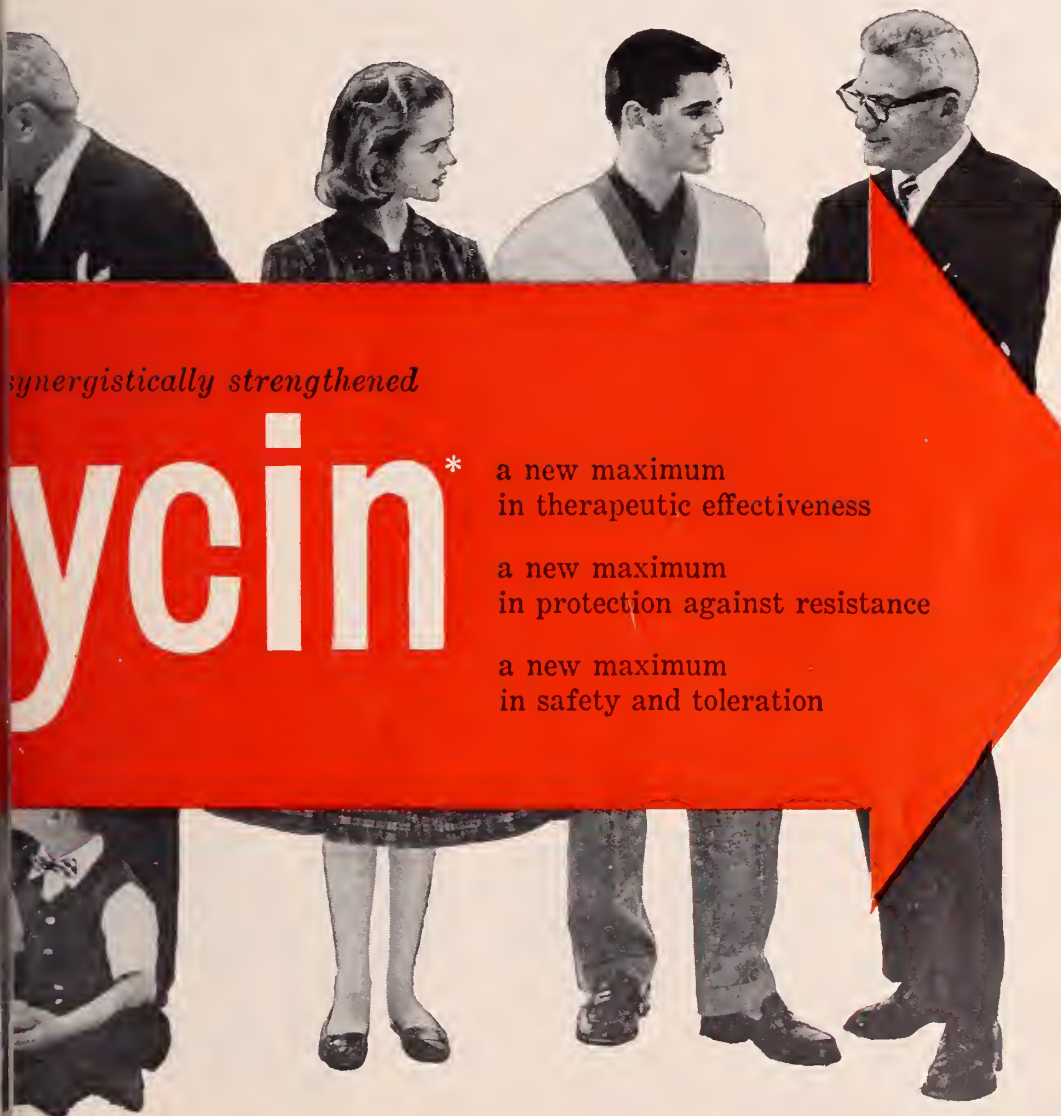
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1. Carter, C. H., and Maley, M. C.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 51.
2. Shalowitz, M., and Sarnoff, H. S.: Personal communication.
3. Shubin, M.: Personal communication.
4. La Caille, R. A., and Prigot, A.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 67.
5. Winton, S. S., and Cheserow, E.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 55.
6. Cornbleet, T.: Personal communication.
7. Loughlin, E. H.; Mullin, W. G.; Alcinder, L., and Joseph, A. A.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 63.

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1. Locket, S.: Brit. M.J.
1:809 (Apr. 2) 1955.

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2. Wright, W.T., Jr., et al.: J. Kansas
M. Soc. 57:410 (July) 1956.

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THREE YEAR EVALUATION OF VAGINAL PAPANICOLAOU SMEARS IN GYNECOLOGICAL OFFICE PRACTICE *

WINSTON H. WEESE, M. D.
NEW ORLEANS

Within the past decade much work has been done to further establish the Papanicolaou smear as it is applied to gynecology for use as a cancer screening and detection method. A review of the English literature covering this ten year period revealed that one hundred eighty-three papers had been published, which discussed and evaluated the technique. Most of this work, however, was done in and reported from large teaching and University Hospitals, using charity patients; and, in many instances, using research laboratory procedures and personnel to examine the test slides. Additional data of this type are reported from community or State Health Departments studies.^{1, 2}

It is believed that a similar study conducted upon office patients in private practice, using the microdiagnostic facilities in the Pathology Department of a five hundred bed general hospital would be pertinent and interesting. The purpose of this paper is to present the results of such a project and to briefly compare the findings with other reports. No attempt is made to discuss treatment or the problems involved in cytological diagnosis.

Investigations by Ayre,^{3, 4} Meigs,⁵⁻⁷ and others⁸⁻¹⁰ confirmed the early work of Papanicolaou¹¹ in showing that suspected cancer could be diagnosed clinically by this method. The importance of the vaginal smear as a screening procedure has been studied by Fremont-Smith,¹² Lombard,¹³ and others.¹⁴⁻¹⁶ This work points out the potentiality of the smear in gynecology.

Graham,¹⁷ from a detailed study of known cases of gynecological malignancy, concluded that the vaginal smear was as reliable as a biopsy, which was taken and read in a large hospital. Laird¹⁸ goes so far as to say that "no pelvic examination can be regarded as complete without a Papanicolaou smear".

Routine vaginal smears have been advocated by Martin,^{19, 20} Brason,²¹ Frech,²² and others²³⁻²⁵ as an effective means of establishing an early diagnosis which, they have shown, considerably enhanced the rate of cure.

Attention has been drawn to early diagnosis by Neibergs,²⁴ Pund,²⁶ and Doege,²⁷ who demonstrated that in situ malignant changes may exist in the cervix for six to twelve years before they become invasive. Fremont-Smith and Graham²⁴ state that "early diagnosis is possible only by means of periodic examination of supposedly well women". Their figures show that if cancer of the cervix is diagnosed in the intradermal stage it is curable in 70 to 80 per cent of cases but, unfortunately, only 1 case in 5 is diagnosed this soon. Since many studies have shown that

* Presented at the November 1956 Meeting of the New Orleans Gynecological and Obstetrical Society.

the large majority of women with pre-invasive cancer have no symptoms, consideration should be given to the routine use of this procedure at periodic pelvic examinations. Te Linde²⁸ estimates that once the diagnosis of cancer of the cervix has been made and therapy instituted, 1 woman out of 4 will die from the disease.

These and other excellent reasons exist for utilizing early diagnosis as one means of lowering present mortality figures. The absence of a cytological diagnostic center in many areas, or the problems and time involved in sending slides to a distant center, may unduly prolong or in some cases be a deterrent to early diagnosis.

These circumstances indicate that it would be advantageous to compare the results which a general pathology laboratory obtained in interpretation of vaginal Papanicolaou smears to the finding of the highly specialized cytological diagnostic center. Everett,²⁹ a pathologist, has outlined the steps for establishment of a cytological diagnostic service under the supervision of the hospital pathologist. It is his opinion that a division of cytology can be easily added to even a small hospital laboratory, and that anyone who has had experience in examining tissue can learn to screen cytology slides.

METHODS AND PROCEDURE

The method of taking and preparing the smears is well known.^{30, 31} In this study patients were instructed to omit douching for twenty-four hours prior to coming to the office. At the time of pelvic examination a small amount of material present in the posterior vaginal fornix was aspirated using the Ayres modified vaginal glass pipette³² to which a two ounce rubber suction bulb was attached. This was done prior to any other examination and before any lubricating jelly had been introduced into the vagina. One drop of this material was then placed on a glass microscopic slide and a thin smear made by spreading it evenly using the side of the pipette. It was then fixed in a solution composed of equal parts of ether and 95 per cent ethyl alcohol for one hour.¹¹ The slides were then dried in

air, labeled, and taken to the Pathology Department of the general hospital.

In the tissue laboratory the vaginal smears were accorded special handling only in that they were stained using the Papanicolaou method instead of hematoxylin and eosin. Materials used in this process were obtained by the hospital laboratory from a commercial supply house. The prepared slides were then screened by the junior members of the department and finally examined by the pathologist and his associate. This method of examination is used on surgical tissue, and insures several independent opinions on each specimen submitted. Members of the department believe that this has proved to be a satisfactory method of screening and diagnosing cytological studies.³³ The results obtained in this manner will be compared to statistics of other studies.

RESULTS

During a period of three years, from January 1, 1953 to December 30, 1955, all new patients and all patients who returned to the office for a periodic pelvic examination were tested by vaginal smear and included in this study. A total of 1,315 smears were taken on 1,109 patients. Eighty-eight patients were screened on two occasions, 48 patients tested three times, 6 patients tested four times, and 1 patient tested five times. Of the total number of individual tests done, 206 were performed two or more times.

The average age of the patients in this study was 39.73 years. These ages are shown by decade in Table 1.

TABLE 1
AGE DISTRIBUTION BY DECADES

Ages	Total Number	Percentage
10-20	21	1.59
20-30	320	24.33
30-40	327	24.86
40-50	384	29.20
50-60	171	13.00
60-70	77	5.85
70-80	13	.98
80-90	2	.15

The Pathology Laboratory of Southern Baptist Hospital, New Orleans, Louisiana, reported a total of 10, or 0.9 per cent

suspicious or positive smears. After clinical study, a final diagnosis of malignancy was made in 3, or 0.27 per cent of cases. This is a ratio of 1 positive to 370 negative cases. There were 7, or 0.63 per cent in which no malignancy was found after clinical investigation. In all 7 suggestive cases the pathology present was found to be an acute inflammatory process in the cervix. There were no false negative tests and, to date, no patient in the group reported as negative has developed cancer.

RESULTS OF OTHER STUDIES

A review of recent literature reveals that the series of cases published on vaginal smear can be divided into three gen-

eral categories. Table 2 shows representative groups of cases screened in large institutions, and interpreted by cytological laboratories. These studies include many charity patients. Table 3 shows the series of private cases collected by clinics or groups of physicians. Table 4 shows the series reported by individuals in private practice. Interpretation of slides in private practice was done in a variety of ways as shown in Table 3 and Table 4.

DISCUSSION

For purposes of comparison the percentage of cases which were proven to warrant a final diagnosis of malignancy were averaged in each table. In the in-

TABLE 2
STATISTICS FROM LARGE INSTITUTIONS USING CYTOLOGY DIAGNOSTIC LABORATORIES

Author	Source of Patients	Number of Patients	Final Dx. Proven Ca.	% of Error	Interpretation of Slides
Papanicolaou & Traut ¹¹	Random cases	3,014	149 (6.44%)	0.3%	Cytology laboratory
Lombard et al ¹³	Tumor Diagnostic Service of Massachusetts Dept. of Health	2,876	141 (4.93%)	4.0%	Cytology laboratory
Skapier ³⁴	Strang Cancer Prevention Clinic of Memorial Hospital, N. Y.	7,777	21 (.27%)	Not reported	Cytology laboratory
Meigs et al ⁵	Massachusetts General Hospital and private patients	1,559	154 (9.87%)	4.0%	Cytology laboratory
Ayre ³⁵	Cancer Cytology Center of Dade County Cancer Institute, Miami, Fla.	3,542	61 (1.72%)	Not reported	Technician screening, Pathologist Cytologist
Haynes et al ³⁶	University of Texas and Parkland Hospital	6,816	224 (3.28%)	Not reported	Cytology laboratory

TABLE 3
STATISTICS FROM CLINIC GROUPS IN PRIVATE PRACTICE

Author	Source of Patients	Number of Patients	Final Dx. Proven Ca.	Interpretation of Slides
Kimmelstiel et al ³⁷	Community Cytology Laboratory (County Med. Soc. & Am. Ca. Soc.)	22,008	354 (0.9%)	Cytology laboratory Pathologist
Martin et al ¹⁹	Gynob Clinic Group (8 men) San Diego County California	11,207	80 (0.71%)	Technician screening, Cytology lab. in office
Doege ²⁷	Marshfield Clinic & Private Practice Marshfield, Wis.	3,000	31 (1.3%) (Ca. in situ only)	Slides sent to Cytologist

TABLE 4
STATISTICS FROM INDIVIDUALS IN PRIVATE PRACTICE

Author	Source of Patients	Number of Patients	Final Dx. Proven Ca.	Interpretation of Slides
Belleville ³⁸ (2 yr. study)	Private Practice * Bainbridge, Ga.	112	2 (1.79%)	Sent to Cancer Detection Center
Romberg ³⁹ (2½ year study)	Private Practice * White Plains, N. Y.	300	2 (0.67%)	Stained in office; read by "trained personnel".
Present study (3 year study)	Private Practice * New Orleans, La.	1,109	3 (0.27%)	Pathologist Southern Baptist Hospital

* Vaginal Papanicolaou smear reported taken as a routine office procedure on all periodic pelvic examinations and all new patients.

stitutional series, 4.42 per cent of cases screened were ultimately diagnosed as cancer. In private practice groups or clinics, 0.98 per cent of cases were proven to be malignant, and in the series from individuals in private practice 0.91 per cent of the cases screened were proven to be malignant.

Based upon a review of these representative series the factors which were found to have a profound influence on reported findings in each study were: (1) the age groups from which the patients screened were selected; (2) the presence or absence of gynecological symptoms in the patients studied; (3) the economic status of the patient and its influence upon the frequency of routine periodic medical examinations; and (4) the qualifications of the facility interpreting the test slides.

COMPARISON OF COST IN VARIOUS STUDIES

The questions of time required to adequately review slides, cost to the patient, and overall cost per positive diagnosis, are frequently discussed when mass screening or routine office testing is suggested. Novak ⁴⁰ states that some five hundred hours of work are necessary to reveal one carcinoma. In the search for one positive smear a relatively large number of tests must be made. Lombard ²⁵ found an incidence of less than 1 per cent positive slides in the female population who presented no gynecological symptoms. He reported less than 10 per cent in a group of patients studied who presented symptoms. The overall cost per positive

diagnosis is consequently high. In this study, however, no individual patient questioned the fee of \$5 which was charged by the pathology laboratory for staining and interpreting the smear. The cost of each positive smear was \$1,646. Table 5 shows the cost per positive diagnosis in various studies.

TABLE 5
COST PER POSITIVE DIAGNOSIS
IN OTHER STUDIES

Neibergs ⁴¹	\$150.00
Meigs ³⁵	\$900.00
Dade County ³⁵	\$300.00
Lombard ¹³	\$1,700.00
Kimmelstiel ³⁷	\$325.00
Martin ¹⁹	\$153.00
Haynes ³⁶	\$357.00

SUMMARY

A study of 1,315 slides from 1,109 consecutive patients, who underwent a periodic pelvic examination was screened by vaginal Papanicolaou smears. These examinations were done in private gynecological office practice during a period of three years. Cytological preparation and interpretations were done in the pathology laboratory of a general hospital. A total of 10 smears, or 0.9 per cent were reported as suspicious of which 3 smears, or 0.27 per cent were ultimately diagnosed as malignant. The results of this study are compared to the findings of six series done in university and teaching hospitals in which specially trained personnel prepared and interpreted the slides. The results are also compared to six series from private practice.

CONCLUSION

The findings of this study and the re-

sults obtained in the screening of vaginal Papanicolaou smears by the Pathology Department of a large hospital compare favorably with other representative studies, and continued use of this method of cytological interpretation is contemplated.

REFERENCES

1. Martin, P. L., Higgins, L. W., Slate, T. A. and Desanto, D.: A five year community study of Papanicolaou screening for cervical cancer, *West. J. Surg.* 63:223 (May) 1955.
2. Dunn, J. E., Jr. and Sprunt, D. H.: Uterine cancer case finding by vaginal cytology, Memphis and Shelby County, Tennessee. *Pub. Health Rep.* 70:341 (April) 1955.
3. Ayre, J. E.: Vaginal and cervical cytology in diagnosis, *Am. J. Obst. & Gynec.* 51:743 (June) 1946.
4. Ayre, J. E., Bauld, W. A. G. and Kearns, P. J.: Test case to show value of cervical cytology smear in diagnosis, *Am. J. Obst. & Gynec.* 50:102 (July) 1945.
5. Meigs, J. V. and others: Value of vaginal smear in diagnosis; 1015 cases, *Surg., Gynec. & Obst.* 81:337 (Oct.) 1945.
6. Meigs, J. V.: Early diagnosis of carcinoma, *Tr. & Stud., Coll. Physicians, Philadelphia* 13:73 (June) 1945.
7. Meigs, J. V.: Diagnosis by vaginal smear method, *Bull. New England M. Center* 7:49 (April) 1945.
8. Gates, O. and Warren, S.: Vaginal smear in diagnosis of carcinoma, *Am. J. Path.* 21:567 (July) 1945.
9. Fremont-Smith, M., Graham, R. M., Janzen, L. T. and Meigs, J. V.: Vaginal smear in diagnosis, *J. Clin. Endocrinol.* 5:40 (Jan.) 1945.
10. Seibels, R. E.: Cervical carcinoma primarily diagnosed by stained vaginal spread, *Am. J. Obst. & Gynec.* 54:343 (Aug.) 1947.
11. Papanicolaou, G. N. and Trant, H. F.: *Diagnosis of Uterine Cancer by the Vaginal Smear*, New York, The Commonwealth Fund, 1943.
12. Fremont-Smith, M., Graham, R. M. and Meigs, J. V.: Vaginal smears as aid in diagnosis of early cervical carcinoma, *New England J. Med.* 237:302 (Aug. 28) 1947.
13. Lombard, H. L., Middleton, M., Warren, S. and Gates, O.: Use of vaginal smear as screening test, *New England J. Med.* 239:317 (Aug. 26) 1948.
14. Crawford, G.: Review of a cancer detection and prevention clinic, *Med. J. Australia* 1:496 (Apr. 2) 1955.
15. Brunschwig, A.: A method for mass screening for cytological detection of carcinoma of the cervix uteri, *Cancer* 7:1182 (Nov.) 1954.
16. Stern, E. and Menoher, N. P.: Cytologic detection of uterine cancer; in a cancer detection clinic, *J. Am. M. Women Ass.* 9:343 (Nov.) 1954.
17. Graham, R. M., Sturgis, S. H. and McGraw, J.: Comparison of accuracy in diagnosis of vaginal smear and biopsy in carcinoma of cervix, *Am. J. Obst. & Gynec.* 55:303 (Feb.) 1948.
18. Laird, W. R.: Papanicolaou smear: integral part of routine pelvic examination, *West Virginia M.J.* 47:197 (July) 1951.
19. Martin, P. L., Slate, T. A. and Merritt, J. W.: Cytologic detection of cervical cancer; four years' experience with routine smear examination in private practice, *Calif. M.* 79:108 (Aug.) 1953.
20. Martin, P. L., Slate, T. A. and Merritt, J. W.: Routine smears; a practical method for cytodetection of unsuspected cervical cancer, *West. J. Surg.* 61:102 (Mar.) 1953.
21. Brason, F. W., Sanes S. and Friedland, E.: Gynecologic, cytologic, and histologic examination of the cervix in apparently well women, *N.Y. State J. Med.* 53:2661 (Nov.) 1953.
22. Frech, H. C.: Two years' experience with diagnosis by means of vaginal smear as routine office procedure, *J.M.A. Georgia* 38:525 (Dec.) 1949.
23. Nieburgs, H. E. and Bamford, S.: Routine use of exfoliative cytologic examinations for detection of asymptomatic cancer of cervix, *J.M.A. Georgia* 39:287 (July) 1950.
24. Fremont-Smith, M. and Graham, R. M.: Screening for cervical cancer in internist's office by routine vaginal smears, *J.A.M.A.* 150:587 (Oct. 11) 1952.
25. Lombard, H. L., Middleton, M., Warren, S. and Gates, O.: Vaginal smear as screening test, *New England J. Med.* 246:523 (Apr. 3) 1952.
26. Pund, E. R. and Auerbach, S. H.: Preinvasive carcinoma of the cervix uteri, *J.A.M.A.* 131:960 (July) 1946.
27. Doege, P. F.: Early diagnosis and treatment of carcinoma of cervix, *J. Internat. Coll. Surgeons*, 18:859 (Dec.) 1952.
28. TeLinde, R. W.: Recent advances in diagnosis and treatment of carcinoma of cervix, *Minn. Med.* 35:558 (July) 1952.
29. Everett, H. and Boddington, M.: Establishment of cytologic diagnosis in laboratory of small hospital, *J. Maine M.A.* 40:256 (Sept.) 1949.
30. Papanicolaou, G. N.: *Am. J. Anat.* 53:519, 1933.
31. Papanicolaou, G. N.: *Science* 95:438, 1942.
32. Ayre, J. E.: Cervical cytology in diagnosis of early cancer, *J.A.M.A.* 136:513 (Feb. 21) 1948.
33. Personal Communication.
34. Skapier, J.: Evaluation of cytologic test in early diagnosis of cancer; two year survey of routine use of smear technic, *Am. J. Obst. & Gynec.* 58:366 (Aug.) 1949.
35. Ayre, J. E.: Cervical cytology as practical screening procedure, *New England J. Med.* 247:361 (Sept. 4) 1952.
36. Haynes, D. M. and Others: Cytologic methods for early detection, *J.A.M.A.* 148:457 (Feb. 9) 1952.
37. Kimmelstiel, P., Pixley, R. T. and Crawford, J.: Statistical review of twenty-two thousand cases examined by cervical smears, *North Carolina M.J.* 15:538 (Nov.) 1954.
38. Belleville, C. G.: Value of cervical smear (Papanicolaou) as routine office procedure, *J.M.A. Georgia* 40:184 (Apr.) 1951.
39. Romberg G. H.: Early diagnosis by cytologic technic as office procedure, *New York State J. Med.* 50:1375 (June 1) 1950.
40. Novak, E.: *Am. J. Obst. & Gynec.* 58:851, 1949.
41. Nieburgs, H. E. and Pund, E. R.: Detection of cancer of cervix; evaluation of comparative exfoliative cytologic diagnosis (Papanicolaou technic); study of 10,000 cases, *J.A.M.A.* 142:221 (Jan. 28) 1950.

CARCINOMA IN SITU OF THE UTERINE CERVIX *

CARY M. DOUGHERTY, M. D. †
BATON ROUGE
WILFRED G. DOLAN, M. D. †
LAFAYETTE

The purposes of this presentation are two: First, to set forth precisely our working hypotheses regarding the disease of carcinoma in situ of the cervix, and second, to summarize a year's experience with the entity as occurring on a very

* Presented for the Virginia Obstetrical and Gynecological Travel Society at New Orleans.

† From the Department of Obstetrics and Gynecology, Louisiana State University School of Medicine, the Walter E. Levy, Jr., Memorial Laboratory for Gynecological Pathology.

active gynecologic service—the Louisiana State University Service at Charity Hospital at New Orleans. Although the medical literature bulges with reports of clinical investigation of intra-epithelial carcinoma of the cervix, there remain certain aspects of pathogenesis and clinical behavior of the disease which are not understood. Questions exist which must be resolved in the future by as yet undiscovered knowledge, yet the clinician faces now the necessity for treating patients who manifest the abnormality. While details of the cause and nature await further research, it is necessary to formulate principles of management from information presently available.

PRINCIPLES OF MANAGEMENT

General: Based on our observations and those of others we have adopted certain concepts. No claim is made for originating them. It must be admitted that they are supported by evidence much of which is circumstantial, nevertheless they seem warranted at this time:

Carcinoma in situ is clinical stage 0 carcinoma of the cervix.

It is the earliest identifiable stage of carcinoma.

In general it must be considered as a progressive lesion which ultimately becomes invasive carcinoma.

Although usually not reversible, there must be instances in which healing occurs spontaneously. Indeed, one wonders whether a rare invasive growth may heal spontaneously.

Diagnosis: Because intra-epithelial carcinoma does not have a characteristic appearance to the clinical examiner, its presence has been detected by other means, namely, the vaginal smear, routine biopsy, and histological study of surgical specimens removed for another reason. A fourth method of detection which will be used on this service is inspection of the cervix by colposcopy. Once the presence of the lesion is suspected by use of these methods of examination, the following requirements must be met: (1) The entire lesion must be examined histologically. (2) Microscopically, the atypical changes

must be seen to extend through the thickness of the epithelial layer, and this should be as thick as normal layer of epithelium. (3) There must be no invasion of cervical

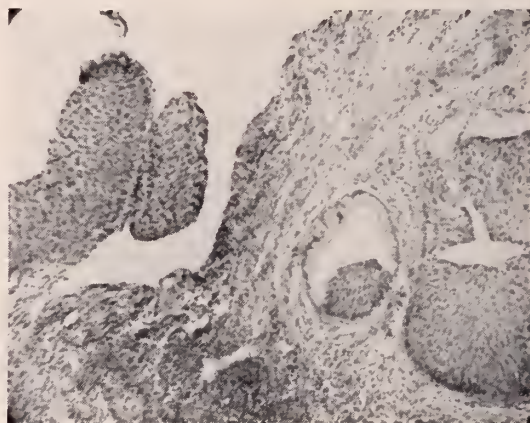


Figure 1—Typical carcinoma in situ with gland invasion. Surface growth is seen on left, displacement of glandular epithelium in two acini of a cervical gland on right. L.P.

stroma. (Downgrowth of epithelium into cervical glands is not invasion.)

These requirements are met by obtaining tissue from the suspect cervix by

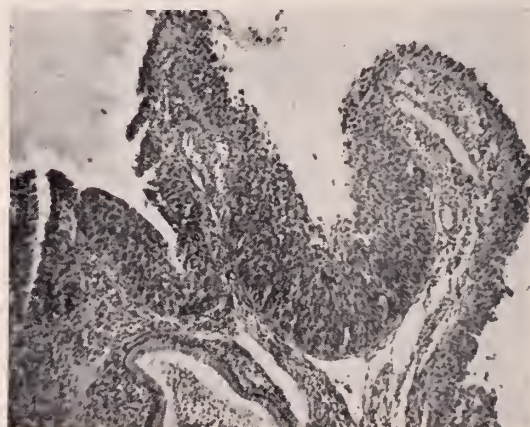


Figure 2—Carcinoma in situ within endocervical canal. Note the varying thickness of the epithelial layer. Although we require full thickness growth for diagnosis of this entity, the rule is clearly not applicable in all biopsy specimens.

means of low amputation or conization with scalpel. Tissue removed by electrocautery is not acceptable for histological study. In preparing the tissue blocks, the specimen should not be incised and laid out flat on the trimming board. It should be fixed as received from the operating room and then trimmed into blocks cut

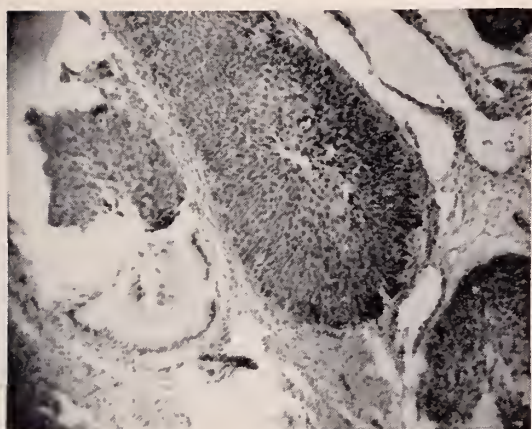


Figure 3—Invasion of glands. There is no columnar epithelium in the center gland but the pattern is identical to that in other areas where both gland and squamous epithelium are present. L.P.

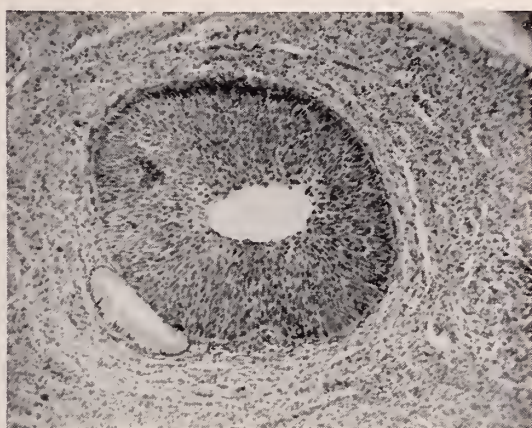


Figure 4—Replacement of glandular by anaplastic squamous epithelium. L.P.

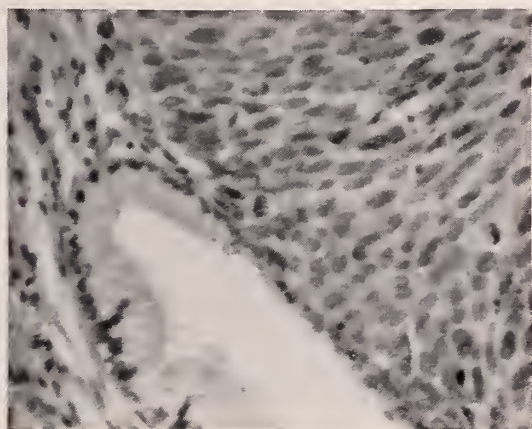


Figure 5—Crowded anaplastic growth of squamous epithelium with remnants of columnar epithelium. At least 6 mitotic figures are seen in this portion of a high power field.

radially around the canal in order that the epithelium is not cracked, wrinkled, and peeled in preparation. Thus the crucial epithelium-stroma relation can be studied as it originally existed.

We have set up a team within the Department of Obstetrics and Gynecology to carry out a diagnostic routine consisting of clinical, cytological, colposcopic, and



Figure 6—A lesion with cytologic detail identical with carcinoma in situ. The growth has a heavy keratin layer and abnormal eleidin pigment layer. Colposcopically this lesion is seen as a detectable change in the portio epithelium of the cervix. L.P.

histological examinations all very closely correlated. We feel that this approach is necessary in order to individualize each case while maintaining standards of diagnosis.

Treatment: After establishment of the correct diagnosis of carcinoma in situ we recommend treatment by hysterectomy, without removing ovaries. In instances in which pregnancy co-exists with carcinoma in situ we modify management by deferring treatment, observing, and re-evaluating the case at six weeks postpartum. The colposcope will be particularly valuable in studying these patients.

EXPERIENCES WITH CARCINOMA IN SITU

Material Studied: In the year 1954 on this service 18 patients came under study for carcinoma in situ. The diagnosis of invasive carcinoma of the cervix was made 85 times. Carcinoma in situ was diagnosed as occurring during pregnancy one time while invasive carcinoma and pregnancy were found in 2 patients. The

number of deliveries in the same time interval was 4,713.

Observations: Table 1 shows the diagnostic method which brought these patients under study. Table 2 lists the final

TABLE 1
TENTATIVE DIAGNOSIS MADE BY

Initial biopsy	14
Subsequent biopsy	2
Hysterectomy	2
	—
	18

TABLE 2
FINAL DIAGNOSIS, 18 PATIENTS

Carcinoma in situ proven	14
Carcinoma in situ excluded	3
Lost to follow-up after biopsy	1*
	—
	18

* Admitted to mental hospital.

TABLE 3
AGE AND PARITY, 14 PATIENTS WITH CARCINOMA IN SITU

Ages: Range: 27 - 64 yrs.	Median: 38 yrs.
Parity: Range: 0 - 14	Multip: 11
	Primip: 3

diagnosis. It is to be noted that the margin of error in the initial biopsy is more than slight, if one counts an unconfirmed positive biopsy of carcinoma in situ as a probable error. We think this a safer assumption in most instances than the speculation that the entire lesion was small enough to have been removed by the act of biopsy, or that it regressed in the interim following biopsy. Table 4 displays the definitive treatment carried out. Eleven patients had total hysterectomy. Two had full radiation because there was some doubt as to presence of real invasion, though it is our feeling that these patients should be classed as having

TABLE 4
METHOD OF TREATMENT, 14 PATIENTS WITH CARCINOMA IN SITU

Total hysterectomy	11*
Removal of stump	2
Radiation	2*

* One patient treated by radiation and hysterectomy.

TABLE 5
COMPLICATIONS OCCURRING AMONG TREATED PATIENTS

Post operative intestinal obstruction	1
Invasive Carcinoma	1

noninvasive lesions. Two patients had removal of a cervical stump.

Complications: (Table 5.) Postoperative intestinal obstruction occurred in a patient who had total hysterectomy, an inevitable accompaniment of abdominal surgery in a small percentage of cases.

Invasive carcinoma developed in one patient who had a cervical stump removed as definitive treatment for carcinoma in situ. In retrospect, it is our opinion that the lesion must have been an invasive one at the time of removal and that the original diagnosis of carcinoma in situ was in error. We think a mistake occurred due to examination of insufficient number of sections, since only three cuts were made.

CONCLUSIONS

Our observations and experiences, generally, tend to confirm our concept of the disease of carcinoma in situ as outlined in the opening comments. We have difficulty, as do most others, in arriving at a completely satisfactory diagnosis in some instances, as for example, distinguishing between gland invasion and stromal invasion. Our tentative diagnosis from initial biopsy is erroneous often enough that we are wary of resting the diagnosis on the reading of a few sections of tissue. We have a standing rule prevailing whenever there is doubt about the diagnosis: Cut more tissue.

Calculation of rates and incidence is not justified in analyzing this small sample of disease but certain trends may be noted. We detect new cases of carcinoma in situ almost as frequently as we find stage I carcinoma. The median age of these 14 patients was 38 years. A small but definite number of instances of carcinoma in situ occur in pregnancy, a coincidence to be expected since both occur in the same age patients, and also since invasive carcinoma is known to co-exist with pregnancy.

In managing carcinoma in situ, care must be taken not to undertreat, such as with cervical amputation alone. Such an error would be more hazardous to the patient than one of overtreatment.

REFERENCES

1. Laird, T. K.: The treatment of in situ carcinoma of the cervix, *West Virginia M. J.* 51:159 (June) 1955.
2. Dahlin, D. C.: Carcinoma in situ of the uterine cervix, *Minnesota M.* 38:331 (May) 1955.
3. Morton, D. G., Zelds, L. J. and Monk, A.: Carcinoma-in-situ of the uterine cervix, *West. J. Surg.* 63:185 (Apr.) 1955.
4. Wheeler, J. D. and Hertig, A. T.: The pathologic anatomy of carcinoma of the uterus. I. Squamous carcinoma of the cervix, *Am. J. Clin. Path.* 23:345 (Apr.) 1955.
5. Dahlin, D. C., Randall, L. N., Soule, E. H. and Dockerty, M. B.: Smears in the detection of preclinical carcinoma of the uterine cervix: further studies with emphasis on the significance of the negative "repeats", *Surg., Gynec., & Obst.* 100:463 (Apr.) 1955.
6. Peightal, T. C., Brandes, W. W., Crawford, D. B. Jr., and Dakin, E. S.: Conservative treatment of carcinoma in situ of the cervix; a clinical and cytopathological study, *Am. J. Obst. Gynec.* 69:547 (Mar.) 1955.
7. Koss, L. G. and Durfee, G. R.: Cytological changes preceding the appearance of in situ carcinoma of the uterine cervix, *Cancer* 8:295 (Mar.-Apr.) 1955.
8. Fennell, R. H. Jr.: Carcinoma in situ of the cervix with early invasive changes, *Cancer* 8:302 (Mar.-Apr.) 1955.
9. Rothchild, I. and others: Effects of intravenous progesterone on the cytologic and histologic characteristics of human cervical carcinoma, *J. Clin. Endocr. & Metab.* 15:151 (Jan.) 1955.
10. Oota, K. and Tanaka, M.: On histogenesis of cervical cancers of the uterus; a histological study in situ and early carcinomas, *Gann, Tokyo* 45:567 (Dec.) 1954.
11. Douglas, G. F.: Carcinoma in situ: an ever-increasing problem, *Gynecology* 9:583 (Dec.) 1954.
12. Mahn, G. A.: Carcinoma in situ: errors of interpretation, *Surg. Clin. N. America* p. 1657-1670 (Dec.) 1954.
13. Lang, W. R., Sheffey, L. C., and Farrell D. M.: Delay period in diagnosis of carcinoma in situ of the uterine cervix; observations from collected data of the Philadelphia Committee for the Study of Pelvic Cancer, *Obst. & Gynec.* 4:57 (Nov.) 1954.
14. Ross, R. A.: The management of intra-epithelial carcinoma of the cervix, *Am. Surgeon* 20:1096 (Oct.) 1954.
15. Hney, T. W. Jr., Large, H. L. Jr. and Kimmelstiel, P.: Preinvasive carcinoma of the cervix: correlation of findings in biopsy and hysterectomy specimens, *Am. J. Obst. Gynec.* 68:761 (Sept.) 1954.
16. Tanaka, M. and Ohta, K.: On histogenesis of cervical cancers of the uterus. A histological study on in situ and early carcinomas, *Gann, Tokyo* 45:197 (Sept.) 1954.
17. Fishman, W. H., and others: B-Glucuronidase studies in women. VII. Premenopausal vaginal-fluid-B-glucuronidase values in relation to in situ cancer of the cervix, *Cancer* 7:729 (July) 1954.
18. Jaller, M. M.: Carcinoma in situ of the cervix; a review including 31 new cases at Bridgeport Hospital, *Connecticut M. J.* 18:581 (July) 1954.
19. McKay, D. G., Hertig, A. T. and Young, P. A.: Cervical carcinoma in situ: a statement of the problem, *J. Internat. Coll. Surgeons* 21:212 (Feb.) 1954.
20. Robinson, L. S. and Hornbuckle, L. A.: Carcinoma in situ; 100 consecutive cases observed over a thirteen year period, *J. Louisiana State M. Soc.* 106:22 (Jan.) 1954.
21. Hamperl, H.: Three group metaphases and carcinoma in situ of the cervix uteri, *Acta Unio internat. cancer* 10:128, 1954.
22. Friedell, G. H. and McKay, D. G.: Adenocarcinoma in situ of the endocervix, *Cancer* 6:887 (Sept.) 1953.
23. Dunn, J. E. Jr.: The relationship between carcinoma in situ and invasive cervical carcinoma; a consideration of the contributions to the problem to be made from general population data, *Cancer* 6: 873 (Sept.) 1953.

THE DIAGNOSIS AND TREATMENT OF URETHRAL DIVERTICULUM IN FEMALE PATIENTS *

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Urethral diverticulum represents an unusual and challenging diagnostic problem. The present study comprises a review of 51 cases from the Charity Hospital of Louisiana and two private hospitals in New Orleans from January 1950 through 1955.

The adult female urethra, a fibromuscular canal measuring 3.5 to 4.0 cm. in length, is located in the anterior vaginal wall adjacent to, and somewhat fixed to, the posterior surface of the symphysis pubis. The mucosal lining of the urethra consists of transitional epithelium in its proximal three-fourths and squamous epithelium in its distal one-fourth. Huffman¹ has shown clearly the presence of many tube-like glands in the walls of the urethra, the largest of which are called Skene's glands and the smaller, para-urethral glands. The ducts of the para-urethral glands open, for the most part, into the lateral and dorsal surfaces of the urethral lumen. The female urethra and its paraurethral glands and the prostatic portion of the male urethra are embryologically homologous.

The adult female urethra is frequently subjected to trauma and irritation, such as is associated with childbirth, coitus, catheterization, or infection. Thus, the paraurethral glands often become damaged and infected, and abscess ensues, with rupture along the line of least resistance into the urethra and consequent formation of a urethral diverticulum. Some believe diverticula to be congenital in origin and, in fact, Parmenter² and McMahon³ cite instances in which evidence in support of this concept is highly

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suggestive, but the consensus still favors the acquired mode of development.

INCIDENCE

The incidence of diverticulum of the urethra is definitely increasing because increased interest in this subject during the past five to eight years has improved diagnosis. In 1944, Menville and Mitchell⁴ reported 13 cases among a total of 510,585 general admissions at the New Orleans Charity Hospital from 1923 to 1944. Wharton and Kearns⁵ of the Johns Hopkins Hospital, reported a ratio of 1 such case to 2300 gynecologic admissions during the period from 1890 to 1949, but most of the cases were concentrated in the last ten years of this period. In the present series, a ratio of 1 urethral diverticulum to 430 gynecologic admissions was found at the New Orleans Charity Hospital during the period 1940 through 1955.

DISTRIBUTION BY AGE, COLOR AND SEX

Patients in this series ranged in age from 17 to 56 years (mean 38 years), a finding that concurs with previous reports. One case of diverticulum has been reported in a 73 year old woman.⁶ The ratio of colored to white patients in the present series is 3 to 1, which agrees favorably with the findings of Menville and Mitchell.⁴ Only 2 instances of diverticulum were found in men, an observation that would support the belief that injury is the etiologic factor, since the female urethra undergoes considerably more trauma than the male urethra. Parity definitely influences the incidence; the present series includes 45 parous and only 6 nonparous women.

PATHOLOGIC ANATOMY

The majority of urethral diverticula arise from the middle and posterior one-third of the urethra. Since the opening is usually into the floor and lateral walls of the urethra, the position of most diverticula is inferior and lateral to the urethra and closely applied to it. Rarely, the diverticulum may arise from the ventral surface of the urethra and, thus, a sac may be encountered in the space of Retzius.⁷ There may be more than one

opening into the urethra, and the diverticular sac may straddle the urethra (Fig. 1a and 1b). Its size can vary from less than 0.5 cm. to 8 to 10 cm. in diameter. An aberrant or ectopic ureter can open into the diverticulum, as reported by Charles L. Willmarth⁸ in 4 cases. The wall of the diverticulum is usually composed of chronically infected fibrous tis-



Figure 1-A

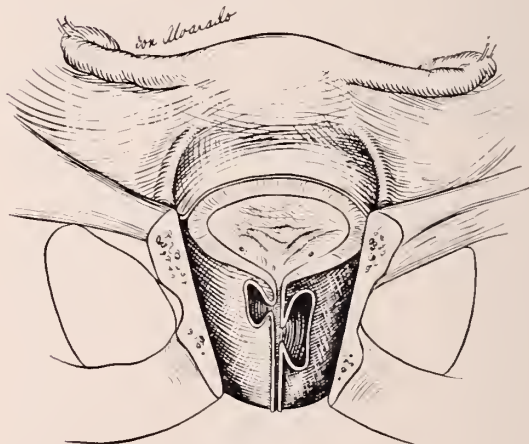


Figure 1-B

sue with a granulation tissue lining or squamous, transitional, or cuboidal epithelium, depending upon the duration and extent of infection. Organisms usually cultured out of the sac are of the coliform group, hemolytic streptococcus, and staphylococcus.

SIGNS AND SYMPTOMS

A high index of suspicion should be

aroused by a history of long-standing or recurring bouts of urinary tract infection or episodes of dysuria, pyuria, hematuria, bladder and vaginal pain. Dyspareunia is a common accompaniment of this abnormality, and many patients complain of a foul discharge or a desire to void after coitus. Approximately 35 per cent of the patients in the present series complained of dribbling after micturition. This abnormality may even cause enuresis in children. An observant patient may occasionally notice a mass in the anterior vaginal wall. Other complaints include suprapubic and pelvic pain, a feeling of fullness in the lower abdomen and vagina, and nocturia (Table 1).

TABLE 1
SYMPTOMS AND SIGNS IN 51 PATIENTS WITH
URETHRAL DIVERTICULUM

	No. of Patients
Previous urinary tract infection	23
Dysuria	27
Dribbling after voiding	17
Dyspareunia	7
Pelvic pressure and pain	17
Hematuria	7
Stress incontinence	6
Urgency	5
Frequency	3
No symptoms	2
Suburethral mass	42
Pus, blood, or urine expressed	22

DIAGNOSIS

Examination for this condition should be routine practice in all gynecologic examinations, just as examination of the vulvovaginal area is made for Bartholin gland abnormality. With the finger of one hand holding the vulva apart, the index finger of the other hand is gently passed along the dorsal surface of the urethra (Fig. 2a and 2b). If a diverticulum is present, a mass will be palpable to the side or beneath the urethra. The ability to express pus, blood, or urine from a pultaceous urethral mass is pathognomonic of diverticulum. In questionable cases, careful digital examination of the urethra over a No. 22 or 24 urethral sound will permit detection of a smaller mass and palpation of a defect in the wall of the urethra, which repre-



Figure 2-A



Figure 2-B

sents the diverticular opening.

After a careful history and physical examination, the use of urethrography is next in importance for accurate diagnosis. In recent times, the Gynecological service of the Louisiana State University Medical School has been using as a diagnostic aid the Trattner catheter, a three-way catheter blocked at its distal end (Fig. 3a and 3b). With a 2-balloon system, both

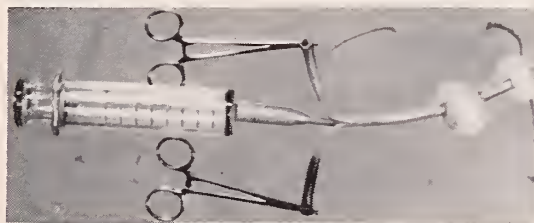


Figure 3-A

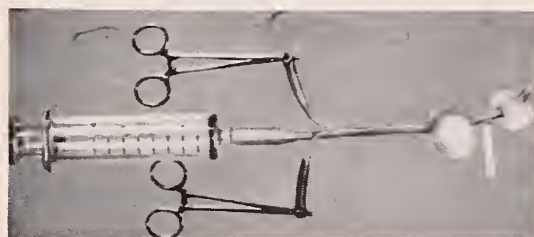


Figure 3-B

the internal and external meati are blocked. An opaque substance (Salpix) is injected into the catheter under moderate pressure until the mass is felt to be distended. The dye enters the urethral channel by way of the dorsally-placed aperture. Every attempt should be made to distend the diverticulum. At this time, anteroposterior and lateral roentgenograms of the pelvic area are taken with the patient in the reclining position. This determines the size of the diverticulum, its location in relation to the urethra and bladder, the number of diverticular openings, and possibly, but rarely an ectopic or aberrant ureter (Fig. 4a and 4b). In doubtful cases, the diagnosis can be defi-



Figure 4-A



Figure 4-B

nately settled by this method, and we have done so in 2 cases. Small openings can be overlooked with a panendoscope. In large diverticula or diverticula closely related to the bladder, contrast air studies may be helpful. Furthermore, roentgenograms of the pelvic area may demonstrate stones. Following this, a complete urologic survey should be made, including panendoscopic examination of the urethra for diverticular openings, aspiration of contents for culture, and examination for other possible abnormalities of the genitourinary tract.

DIFFERENTIAL DIAGNOSIS

The differential diagnosis should include all masses of the anterior vaginal wall. The more common conditions that might cause confusion are: (1) urethrocele and chronic urethritis, (2) suburethral cyst, (3) abscess of cyst of Skene's gland, (4) cyst of Gartner's duct, (5) diverticulum of the bladder, (6) endometriosis, and (7) varicosities. Neoplastic lesions of the urethra, Skene's glands, and anterior vaginal wall must also be considered.

COMPLICATIONS

Complicating pathologic conditions, although not numerous, are important. Wharton and Kearns⁵ have reported that 10 per cent of all diverticula are associated with the presence of stones; 4 such cases are included in the present Charity Hospital series. Adenocarcinoma has been reported in a few instances, and 2 cases of spontaneous urethrovaginal fistula were found in the present series.

TREATMENT

It is generally advocated that all diverticula of the urethra should be removed, unless age, health, and other conditions preclude operation. Asymptomatic diverticula will eventually lead to difficulties, and conservative therapy with antibiotic drugs, periodic emptying by massage, and hot baths have no place in definitive therapy of diverticula. In patients with an acute diverticular abscess, incision and drainage may be accomplished through the vagina. Furniss⁹ has postulated that some diverticula are due

to urethral stricture, and any such abnormality should be corrected by dilatation, meatotomy or both.

In 1936, McNally¹⁰ described an operation for the radical treatment of urethral diverticula, consisting of excision of the lesion. His technic, or modification thereof, is now accepted as the operative method of choice in many clinics. In the Gynecological service of the Louisiana State University Medical School, we have been utilizing a ten day period of preliminary therapy in infected cases. Three grams of cortisone or comparable amounts of related steroids are administered during this period to reduce the inflammatory reaction about the sac and facilitate dissection. Daily digital emptying of the sac, sitz baths, and administration of appropriate antibiotic drugs are recommended. At the end of this time, the operative procedure is undertaken.

In preparation for the operation, the patient is placed in an exaggerated lithotomy position. A No. 8 or No. 10 Hegar dilator is placed in the urethral canal and is used to outline the urethra as well as to displace the urethra and diverticulum forward for greater accessibility. A longitudinal incision is made into the vagina over the sac, and the vaginal mucosa is dissected laterally. The pubocervical fascia is dissected from the mucosa, as in anterior vaginal repair, to free the urethra and the diverticular sac. The dissection of the sac is continued as completely as possible, and the sac is opened. At this point, a procedure described by Moore¹¹ in 1952 may be utilized: A Foley catheter, with the tip removed, may be inserted into the sac through a stab wound, after which the opening is closed about the catheter with a pursestring suture. By traction on the catheter, the sac containing the distended balloon is better outlined, and the dissection is facilitated. After the sac is opened, the Hegar dilator can be seen shining through the opening in the urethral wall. At this time it is important to determine whether or not there is more than one opening into the sac. Further-

more, the size of the opening should be noted to facilitate dissection of the sac and prevent damage to the urethral walls. The excess part of the sac is excised, and the opening is closed with interrupted atraumatic 000 catgut sutures. The Hegar dilator will prevent too tight a closure. A second layer of chromic 00 is used to approximate the pubocervical fascia, and, finally, the vaginal mucosa.

Edwards and Beebe¹² have described a new operative technic, consisting in incision of the urethral floor from the external meatus to the diverticular opening. They contend that such incision of the urethral floor affords increased exposure and thus permits prompt identification of the orifice, or orifices, of the diverticulum.

Occasionally, complete dissection of the sac becomes difficult. In such cases, it is sufficient to outline the opening clearly and close it, as described. The lining of the remainder of the sac can be destroyed with phenol or with an electrical unit.

Gilbert and Cintron⁷ described a technic for the operative treatment of a diverticulum in the space of Retzius. With the use of the panendoscope, the opening is located, and a ureteral catheter is threaded into the sac. The urethra is approached by the suprapubic route. With the ureteral catheter coiled about, the diverticulum can be dissected and excised. In nulliparous patients, the Schuchardt incision will greatly enhance exposure.

Routine use of an indwelling catheter has not been necessary; most patients will void without difficulty. Some may require one or two catheterizations, which should be done gently with the use of a small catheter. By elimination of the indwelling catheter, the duration of hospitalization can be reduced 40 to 50 per cent (Table 2).

POSTOPERATIVE COMPLICATIONS

Postoperative complications are rare. Recurrences and formation of fistulae may occur but can usually be avoided by good operative technic with the use of the layer method. Incontinence is usually

TABLE 2
TYPE OF TREATMENT IN 51 PATIENTS WITH
URETHRAL DIVERTICULUM

	No. of Patients
Excision of diverticulum	
With postoperative catheter	20
Without postoperative catheter	11
Vaginal hysterectomy—Anterior repair	7
Schuchardt incision	2
Incision of urethral floor	1
No operation	6
To be operated	4

temporary and disappears within one to three weeks.

SUMMARY

Urethral diverticula are not rare, the incidence having increased recently with greater awareness of the condition and improved diagnostic methods. The etiologic role of trauma in this condition is suggested by the greater frequency observed in women, in whom the urethra is subjected to considerable injury. The use of the Trattner catheter in urethrography will assist materially in establishing the diagnosis. All urethral diverticula should be excised, if feasible. The importance of preliminary therapy with cortisone, manual emptying, and appropriate antibiotics is stressed.

REFERENCES

1. Huffman, J. W.: *Am. J. Obst. and Gynec.* 55: 86, 1948.
2. Parmenter, F. J.: *J. Urol.* 45: 479, 1941.
3. McMahon, S.: *J. Urol.* 55: 69, 1946.
4. Menville, J. G. and Mitchell, J. D.: *J. Urol.* 51: 411, 1944.
5. Wharton, L. R. and Kearns, W. J.: *J. Urol.* 63: 1063, 1950.
6. Counseller, Virgil A.: *Am. J. Obst. and Gynec.* 57: 231, 1949.
7. Gilbert, C. R. A. and Citron, F. J. R.: *Am. J. Obst. and Gynec.* 67: 616, 1954.
8. Willmarth, C. L.: *J. Urol.* 59: 47, 1948.
9. Furniss, H. D.: *J. Urol.* 33: 498, 1935.
10. McNally, A.: *Illinois M. J.* 69: 234, 1936.
11. Moore, T. D.: *J. Urol.* 68: 611, 1952.
12. Edwards, E. A. and Beebe, R. A.: *Obst. and Gynec.* 5: 729, 1955.
13. Arey, L. M.: *Developmental Anatomy*, 1946. Philadelphia, W. B. Saunders Co.
14. Krieger, J. S. and Pontasse, E. F.: *Am. J. Obst. and Gynec.* 68: 706, 1954.

TUBERCULOSIS; EYE *

LEON F. GRAY, M. D.
SHREVEPORT

Tuberculosis is an infectious disease caused by the tubercle bacillus (*Mycobacterium tuberculosis*) and characterized by the production of tubercles.

The etiological agent of human tuberculosis is the *Mycobacterium tuberculosis*. Of the several members of this group of bacteria, only two are important, since none of the others have been shown conclusively to give rise to disease in man. Human tuberculosis is produced either by *Mycobacterium tuberculosis* (homonis) or by *Mycobacterium tuberculosis* (bovis). Both of these organisms produce disease in the lower animals as well as man.

The mature organisms produce a highly resistant, waxy covering which in itself is harmful. It is this waxy coat that gives to the tubercle bacillus its most distinctive physical and chemical character, the ability to absorb specific dyes and to retain them when the stained bacilli are treated with acids.

MODE OF ACTION OF THE TUBERCLE BACILLUS

It produces injury to tissues by a variety of means, and both living and dead organisms are effective, but not in the same way. Only the living organisms are capable of producing the progressive disease, but dead bacilli may produce initial focal lesions that are virtually indistinguishable from those produced by living organisms.

There is no indication that the tubercle bacillus produces an exotoxin, nor does it produce an endotoxin, in the ordinary sense of the term.

Its lethal effect arises chiefly out of the fact that it sensitizes the tissues to its own products of disintegration to such an extent that the tissues become highly susceptible to injury and are killed when subsequently they are exposed to these organisms or to their chemical derivatives.

* Presented at the Seventy-sixth Annual Meeting of the Louisiana State Medical Society, Alexandria, La., April 24, 1956.

A possible secondary injury must be added to the above, which is produced by toxic products of tissues which disintegrate following primary injury through the sensitization mechanism.

Anderson¹ and others in this field have isolated from the tubercle bacillus, three important fractions, namely, lipoids, proteins and carbohydrates. Sabine¹¹ and her coworkers have made extensive studies of the specific action of these fractions upon animal tissues.

The response of animal tissues to fractions of the tubercle bacillus, as noted above, are as follows: The lipoids, of which the most important constituent is phthioic acid. The carbohydrates are principally polysaccharides. The proteins are not all alike, some being antigenic while others are not.

The lipid phagocytizes the macrophages. The phagocytosed lipid acts as an alternative stimulus to the cells and causes them to take on an epithelioid appearance. Some of these cells are converted into multinucleated giant cells, through an increase in size. This is due to phthioic acid, primarily.

The polysaccharide fraction of the bacillus is highly chemotactic for the polymorphonuclear neutrophilic leucocytes. It is worth noting that the polysaccharides also are highly toxic for the neutrophilic leucocytes, a condition that may have much to do with characteristic disappearance from the lesion in the early stages of its development.

Repeated injections of protein derived from tubercle bacilli provoke a pronounced response of plasma cells in the injected areas. Each one of the derivatives of the organism calls out these cells, but the plasma cell reaction apparently is more pronounced and more regular in its appearance following the injection of the protein fraction. Of far greater importance than the morphological reaction to the proteins is the immune response of the tissues to this fraction. In the non-tuberculous animal a first injection of protein provokes no visible response, but

in the tuberculous animal the condition is quite different. The tissues of the tuberculous animal are progressively altered by their continuous association with tubercle bacilli and their derivatives, and finally they attain a high degree of sensitization to these antigens. The result of this is that the most violent acute inflammatory reaction occurs when protein derived from tubercle bacilli is injected into the tuberculous animal. Although this sensitization (tuberculous allergy) takes place only through actual tuberculous infection or through the introduction into the tissues of the whole bodies of dead tubercle bacilli it has long been thought to be related specifically and, most likely, exclusively to the protein component of the bacillus.

OCULAR TUBERCULOSIS

It may be taken, therefore, that with the exception of acute miliary tuberculosis, ocular tuberculosis occurs with the greatest rarity in the presence of active tuberculosis elsewhere, but rather in apparently normal, healthy well-nourished individuals with a *healed or benign tuberculosis infection*. In some organ, usually the lymphatic system in the chest, more rarely in the lungs, the glandular depot, even though it is usually slight, quiescent, clinically healed or calcified, being capable of disseminating infection after the primary pulmonary focus has healed, presumably by the occurrence of an intermittent bacillaemia which is usually without systemic significance.

The incidence of ocular tuberculosis is typical of tuberculosis generally. It can affect any part of the eye ball, its adnexa or the optic nerve.

The part of the eye in which we see it most, is the choroid. Here, it occurs in acute or miliary and chronic forms. Miliary tubercles are found in the late stages of acute miliary tuberculosis, especially tuberculous meningitis. Ophthalmoscopically they appear as round, pale yellow spots, most frequently observed in the neighborhood of the disc, though any part of the choroid may be attacked. Generally

only three or four spots are seen, but as many as sixty or seventy have been found. They vary in size from pin-point specks to 1 or 2 mm. in diameter. They usually project slightly, so as to raise the retina but the inner surface is often quite flat, while the outer surface projects into the retina. They afford the most important diagnostic evidence of tubercle in cases of meningitis and obscure general disease. Microscopically they consist of typical giant cells, containing a variable number of tubercle bacilli.

Chronic tubercle may occur as a diffuse or disseminated inflammation affecting large areas or the whole choroid, and characterized by the extensive development of granulation tissue; or, more rarely, as a solitary or conglomerate mass, simulating sarcoma, but usually showing definite signs of inflammation, e.g., edema of the retina, vitreous opacities, etc. The mass consists of granulation tissue containing giant cells, spreads until it involves the retina and may finally fill the posterior part of the globe.

TREATMENT OF OCULAR TUBERCULOSIS

The treatment of this disease is outlined in detail in two very fine articles by Kratka⁸ and Woods.¹² Both treatments are excellent. You will find the treatment which Dr. Woods uses outlined below.

This concept of the pathogenesis of ocular tuberculosis gives us our clue to the treatment of the disease. The first step is to conserve and promote the native and acquired resistance. There is little that can be done on this point other than regulation of the personal hygiene, proper diet, control of intercurrent infections, elimination of foci of infection, and any other therapy indicated by the individual needs of the patient.

The second point is the estimation of the degree of tissue hypersensitivity present. If there is a high degree of tissue reactivity to tuberculin or evidences of acute inflammation in the eye, the sensitivity of the ocular tissues to tuberculo-protein may be assumed to be high. Desensitization therapy with tuberculin is

then indicated. It should be undertaken with the realization that it is a long and tedious process, that it will take months to achieve tissue desensitization, and that once such desensitization is attained, tuberculin must be continued for a long period to prevent a return of the hypersensitivity. The dose of tuberculin should always be below the point of reaction of the individual patient, and all local and focal reactions should be avoided. Such desensitization therapy is indicated for the reason that should the patient have a recurrence, such recurrence will take place in insensitive tissue and the destructive phases of the tuberculous lesion be avoided.

The final, and most important step is the direct attack on the bacilli. To this end there are available isoniazid, streptomycin, and para-aminosalicylic acid or thiazolsulfone (Promizole) as adjuvants. The specific therapy consists of a mixture of streptomycin and dihydrostreptomycin, 1.0 gm. every second day; para-aminosalicylic acid, 12 gm. daily, and isoniazid, 300 mg. daily in divided doses. After five days the dose of isoniazid may be reduced to 150 mg. Treatment should be continued for a minimum period of forty-two days, and longer if a full therapeutic response is not obtained. The patient should be carefully watched for any side-effects, and if such are noted the drug probably responsible is either omitted entirely or the dose greatly decreased. If para-aminosalicylic acid is believed responsible, thiazolsulfone may be substituted.

With such a regime, in cases of undoubted ocular tuberculosis, some clinical improvement is usually noted within two weeks. The absence of any therapeutic response within three weeks throws doubt on the validity of the original diagnosis. Even with a favorable initial response and complete control of all clinical evidence of activity there are recurrences of the ocular disease in about 25 per cent of the patients adequately treated. For this reason, desensitization therapy is indicated to lessen the severity of such recurrences

and prevent the destructive phases of the lesion.

REFERENCES

1. Anderson, R. J.: The chemistry of the lipoids of tubercle bacilli, *Physiol. Rev.* 12:166, 1932.
2. Bell, E. T.: Textbook of Pathology, 3rd Ed. Philadelphia, 1938, Lea & Febiger, p. 179.
3. Cummins, S. D.: *J.A.M.A.* 154:52, 1954.
4. Duke-Elder, Sir W. Stewart: Textbook of Ophthalmology, Vol. 3, p. 2284, 1941, St. Louis, C. V. Mosby Co.
5. Parsons, Sir John Herbert and Duke-Elder, Sir W. Stewart: Diseases of the Eye, 11 ed. 1948, New York, MacMillan Co.
6. Forbus, Wiley D.: Reaction to Injury, p. 579, 1943, Baltimore, Williams & Wilkins Co.
7. Krawiec, Roy R.: A Color Atlas of Hematology, 1947, p. 18, Philadelphia, J. B. Lippincott Co.
8. Kratka, William H.: *A.M.A. Arch. Ophthalm.* 54:330 (September) 1955.
9. MacCallum, W. G.: A Textbook of Pathology, 4th ed. 1931, p. 602, Philadelphia, W. B. Saunders Co.
10. Roche Products Limited: Diseases of the Eye, 2:11.
11. Sabine, F. R.: Cellular reactions to fractions isolated from tubercle bacilli, *Physiol. Rev.* 12:141, 1932.
12. Woods, Alan C.: *A.M.A. Arch. Ophthalm.* 52:174 (August) 1954.

DISCUSSION

Dr. Pegram L. McCreary (Lake Charles): The striking characteristic of ocular tuberculosis according to Wood is the pleomorphism of the lesions, that is, the widely different clinical pictures produced in the eye by infection with the tubercle bacillus. These lesions fall into four general groups, that may often merge one into the other.

First, ocular tuberculosis may be little more than a foreign body reaction. An example of this lesion is miliary tuberculosis of the iris, in which there may be a minimum of inflammation and no tissue destruction. The tubercles may be absorbed or hyalinized leaving little or no residua.

Second, the lesion may be characterized by sharp inflammation, but the process quickly becomes circumscribed and heals. Recurrences at or near the original lesion are frequent. Examples of this type are sclerokeratitis of young adults, and what de Schweinitz has aptly termed "circumscribed plastic choroiditis"

Third, tuberculous eye disease may be characterized by a long drawn out chronic course, with exacerbations and remissions and sometimes a slowly progressive tissue destruction. An example is the chronic tuberculous uveitis of adults.

The fourth type of ocular tuberculosis may take on the picture of a violent rapidly spreading inflammation with marked tissue destruction, necrosis, and caseation, sometimes terminating in rupture of the globe. An example of this is the rapidly spreading chorioretinitis of children and young adults, and caseating tuberculomas.

There are many difficulties encountered in deciding whether a particular case of endogenous chronic endophthalmitis is or is not tuberculous. Consequent upon these difficulties are large and unresolved uncertainties as to whether tuberculous infection is responsible for a large or a small fraction of the cases in which it may rea-

sonably or remotely be suspected. These doubts do not, however, justify the conclusion that ocular tuberculosis does not exist. There are cases in which ocular tuberculosis can be established with a high degree of certainty, and the proper treatment instigated as has been so well outlined by Dr. Gray.

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TULAREMIA AN ANALYSIS OF ONE HUNDRED FORTY-SEVEN CASES

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SHREVEPORT

Tularemia is endemic in northwest Louisiana, and Confederate Memorial Medical Center of Shreveport which serves this area offers unusual opportunities to study the disease. Because of the frequent occurrence of tularemia in this area considerable experience has been accumulated, and it is believed that some of the impressions gained are not generally appreciated. It is the purpose of this presentation to review the clinical material in this hospital and to point out some manifestations of the disease which appear to be fairly common, but have not been adequately emphasized.

The data presented are the result of an analysis of 147 cases seen from June 1948 to June 1955. Occasional reference for the sake of comparison is made to a previous unpublished study by one of us (F.T.D.) which included 169 cases seen from January 1934 to January 1948.

In the present series all cases met one of the following diagnostic criteria. In 86 cases the diagnosis was proven by a rising titer of serial tularemia agglutinations performed at least forty-eight hours apart.

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In 52 cases there was a typical clinical picture of tularemia with a single high agglutination titer. In these, all had agglutinations of 1:160 or greater and only 3 had titers of less than 1:1280. In 9 cases autopsy findings alone were diagnostic. One of the autopsied cases was further proven by guinea pig inoculation.

INCIDENCE

During this study period there was an average of 21 cases of tularemia per year; during the same period the total hospital admissions averaged 22,000 per year. Eighty-nine per cent of the tularemia cases were in the colored race, though only 65 per cent of all hospital admissions were colored. Men were affected more often than women by a ratio of four to one (117 to 30). There were 100 colored males, 31 colored females, 15 white males, and only 1 white female. The age of the patients ranged from three to eighty years and there was an even spread of cases throughout the decades of life.

VECTORS

A host of vectors may transmit *Pasteurella tularensis*. In this series, however, only three vectors were encountered: ticks, rabbits, and squirrels. For an analysis of the vectors and the type disease they caused, refer to Table 1.

TABLE 1
TULAREMIA VECTORS

TYPE DISEASE	VECTORS					Per Cent
	Tick	Rabbit	Squirrel	Unknown	Totals	
Ulceroglandular	37	6	2	23	68	46
Typhoidal	5	5	1	42	53	36
Glandular	3	0	0	19	22	15
Oculoglandular	0	1	0	3	4	3
Totals	45	12	3	87	147	—
Per Cent	31	8	2	59	—	—

It is interesting to note, and should be emphasized, that in 87 cases (or 59 per cent) no vector could be established. In only the ulceroglandular form was the association of a vector with an ulcer and lymphadenopathy a fairly consistent and reliable clue in the diagnosis. In the other three clinical types of tularemia failure to obtain a vector history was the rule. The failure to determine a vector contact, therefore, does not constitute evidence to

rule against the diagnosis of tularemia, and this should be kept in mind when dealing with a fever of undetermined origin.

INCUBATION PERIOD

Generally the incubation period was difficult to ascertain, particularly in view of the large number of cases in which no vector could be established. In only 32 of the 147 cases could an incubation period be determined with any degree of accuracy. In these cases it ranged from less than one day to fourteen days with a mean of five and seven-tenths days and a median of three days.

GENERAL

The study of these cases has shown that tularemia is a febrile disorder with rather protean manifestations. It may be seen as a severe, toxic, overwhelming infection but may also occur as a mild disorder with only lymphadenopathy as a complaint.

In this study, for convenience of discussion, the disease has been divided into four clinical types: ulceroglandular, typhoidal, glandular, and oculoglandular.

ULCEROGLANDULAR TULAREMIA

The ulceroglandular form was the most common type. It occurred in 68 of the 147 cases (or 46 per cent) of the total. It was the easiest of the four types to diagnose because of the characteristic appearance of a superficial ulceration (not always single) with regional adenopathy. A vector history was established in 45 of the 68 cases and a correlation between the site of the ulcer and the type vector could be exhibited. In those cases transmitted by the rabbit or squirrel the primary lesion was located on the hand; when the tick was the vector the ulcers usually appeared on the trunk, especially in the groin or axilla. Ulcers of the perineum and external genitals were not infrequent and their occurrence in these locations necessitated careful inspection for discovery. An almost constant sign or symptom was fever, which tended to be septic in type in almost half of the cases (30) with irregular spikes from 102 to 104° F. Fever in other cases was described as intermittent (16) and low grade or variable in others. Chills were noted in half of

the patients, usually in those with septic temperature.

Other common manifestations were malaise, weakness, and headache. Delirium, coma, pharyngitis, and jaundice were rare manifestations.

TYPHOIDAL TULAREMIA

Typhoidal tularemia was diagnosed in patients who demonstrated no ulcers, lymphadenopathy, or eye lesions. It was easily the most dramatic, the most serious and the most difficult to diagnose. Fifty-three (36 per cent) of the total cases were of the typhoidal variety.

These patients were usually admitted to the hospital acutely ill with fever, chills, and malaise. Prostration (11), abdominal pain (7), delirium (5), dehydration (5), pharyngitis (4), meningismus (4), vomiting (4), and diarrhea were also noted. The diagnostic difficulties associated with such a picture are apparent. A history of vector contact was of little value because a definite vector was noted in only 11 instances (20 per cent).

Pulmonary involvement was pronounced in this group. Forty per cent showed pneumonia or pleural effusion. The throat was frequently involved, varying from pharyngitis to ulcerative tonsillitis. Diarrhea was recorded in 17 per cent of the typhoidal cases and was limited to this form of the disease. Diarrhea was usually "loose and watery" but once was described as bloody.

The fever in this type disease tended to be septic (54 per cent) and quite high. Thirty-two (60 per cent) of these patients had temperature of 104° or greater. Temperature consistently below 103° was rare (only 3 cases).

GLANDULAR TULAREMIA

Glandular tularemia occurred in 22 (15 per cent) of the cases. These cases were characterized by adenopathy without ulceration and the patients usually had a rather vague illness of some weeks duration before entering the hospital. A vector was established in only 3 cases. The most usual complaint was related to adenopathy and in 8 (36 per cent); there were no other complaints. The nodes were re-

gional and most commonly axillary (10); cervical, and inguinal nodes were also frequently involved. Occasionally the nodes suppurated and surgical drainage was necessary. The lymphadenopathy was of rather long duration, persisting from three weeks to more than four months.

Fever was noted in all patients who had symptoms other than lymphadenopathy (59 per cent). Chills occurred in one-half of the patients who had fever. In those patients with fever and chills, there were other constitutional symptoms such as malaise and weakness.

OCULOGLANDULAR TULAREMIA

The oculoglandular form occurred 4 times, and once the patient apparently inoculated his eye himself. In this case, which was initially ulceroglandular, there was an ulcer on the index finger with epitrochlear nodes. While on treatment the patient rubbed his eye, and after an undetermined period developed severe conjunctivitis. The eye cleared on no therapy other than that afforded him for systemic tularemia, and it was felt that he had tularemic conjunctivitis.

In the other 3 cases there was also conjunctivitis. Submaxillary nodes were present in conjunction with the eye lesions. In all cases the clinical picture was that of a septic illness with high fever, chills, malaise, and weakness. In no cases were there any late eye sequelae. In one case with unilateral eye involvement, erythema multiforme and ulcerative stomatitis were also present.

MANIFESTATIONS DESERVING EMPHASIS

The occurrence of pneumonia, throat involvement, and renal involvement appeared frequently enough to deserve special mention. Pneumonia occurred in 19 per cent of all cases. The pneumonic manifestation appeared most frequently in the typhoidal type of disease with 41 per cent of this group being involved. Only 5 per cent of the ulceroglandular cases showed pulmonary involvement. One case of glandular tularemia had pneumonia. The pulmonary involvement varied from typical lobar and bronchopneumonia to pleurisy with effusion.

There was involvement of the mouth or pharynx in 12 of the typhoidal cases (25 per cent). Usually these patients had ulcerative pharyngitis and the appearance of the tularemic lesion was noted to closely resemble a diphtheric membrane in a number of instances.

Renal involvement was the most serious complication. Six of the 11 fatal cases were demonstrated to have the pathologic lesion known as lower nephron nephrosis and all died with oliguria, acidosis, and azotemia. On occasion, these patients seemed to improve in regard to their septic state but could not survive the effects of renal shutdown. In the earlier series of 169 patients acute renal failure was also noted to occur not infrequently, and was associated with hypoglycemia. In the present series no data relative to hypoglycemia was available. Renal failure is discussed more fully in a later section.

LABORATORY DATA

The hematologic data obtained on these patients is compiled from single blood counts obtained from each patient on admission to the hospital. Subsequent counts were not analyzed. In the vast majority the blood count was taken while the patient was in the acute stage of the illness. The total WBC count under these conditions was found to have a wide range—from 3,000 to 24,000, (Mean 11,000). In those cases with leukocytosis there was a definite neutrophilic preponderance. Marked leukocytosis was rarely found and normal blood counts were common. A mild anemia (11.8 gm. Hb. average) was usually recorded on admission.

Agglutinations were done on all cases except those who died before the disease was suspected (4). In general, the agglutination for tularemia was not positive before the beginning of the second week. The titer rose progressively, usually to 1:1280 or more by the third or fourth week. In 10 cases agglutinations were done from six to twenty-seven weeks after the onset of the illness. In all of these, titers were 1:2560 or more, and in one case was 1:10240. Unfortunately, it could not be determined just how long the titers

remained significantly elevated.

Agglutinations for brucella, typhoid, paratyphoid, and typhus were also performed one or more times in all but 12 cases. There was almost no significant cross agglutination with *B. abortus* although such is ordinarily thought to occur frequently. In only 5 cases was there a titer for *B. abortus* of 1:160 or more. In one case a high titer of 1:5120 for brucella caused confusion in the diagnosis. An absorption test was done, however, which proved the diagnosis to be tularemia. In all other cases of conflict the tularemia titer was found to rise while the brucella titer subsequently fell. Other febrile agglutinations were never of high enough titer to cause confusion. Treatment was not found to alter the trend of tularemia agglutinations as far as could be determined. An occasional high heterophile (Paul-Bunnel) agglutination was encountered.

DEATHS

In the analysis of 169 cases of tularemia seen from January 1934, to January 1948, there were 53 deaths (all autopsied) or a mortality of 33 per cent. In the present series of 147 cases, 11 died or a mortality rate of 7.5 per cent, illustrating how the prognosis has changed with the development of specific antibiotic agents.

The typhoidal form was the most fatal; 10 of the 53 patients died, (19 per cent). The other death occurred in an ulceroglandular case. The average age of those dying was fifty-three years (range 17 to 79 years).

The duration of illness varied from six to thirty-nine days with a mean of fourteen days and a median of ten days. Since agglutinations for tularemia do not occur before the seventh to fourteenth day of illness, the patient may die before the serologic test can become useful. In only 2 cases was the diagnosis established before death. In 5 cases the diagnosis was suspected and agglutinations were performed with a negative result. Four times patients died before the diagnosis was suspected.

In the one case in which death occurred

after thirty-nine days of illness, the cause of death was a rapidly growing retrolaryngeal abscess. This abscess came on after the patient was afebrile and improving, but grew so rapidly that respiratory obstruction and death occurred before the abscess was recognized.

All the other cases were dramatic infections. These patients died in one of two ways. Some died rapidly (earliest in six days), apparently solely of overwhelming toxemia. In this group there were 4 cases and none of them received streptomycin. Two received penicillin and sulfonamides with no effect.

The other 6 cases, interestingly, expired in a clinical state of uremia and at autopsy were found to have the lower nephron lesion. All of these patients were desperately ill throughout the course of their illness, although in 2 cases fever was normal at the time of death, apparently as a result of streptomycin therapy. Case 521075, a 57-year old colored male, is cited as an example of severe tularemia terminating in renal failure. This patient was taken suddenly ill ten days prior to death with abdominal pain, backache, and fever. After being ill for four days with these symptoms he was referred to this hospital in a state of semistupor, dehydration, oliguria, and with a fever of 102° which rose to 107° on the same day. Initial blood chemistries included an NPN of 85 mgm. per cent and a creatinine of 5.1 mgm. per cent. Despite streptomycin and appropriate parenteral fluids and supportive measures the patient expired six days later after continued oliguria and with a terminal NPN of 174 mgm. per cent and a creatinine of 14 mgm. per cent. At autopsy there were foci of necrosis in the lungs, peribronchial lymph nodes, spleen, liver, and bone marrow consistent with tularemia. The kidneys demonstrated tubular changes of lower nephron nephrosis and other significant pathologic changes were absent. There was no known vector and the tularemia agglutination was negative.

The other 5 cases had similar clinical laboratory and autopsy findings. The

pathogenesis of the renal lesion is not clear from the available data, as the patients more often than not were uremic on admission. The possible role of hypotension or drugs given prior to entry unfortunately could not be established.

The pathologist at this hospital in performing the 53 autopsies of the earlier series and the 11 of the present series noted the frequent occurrence of areas of necrosis involving the liver, spleen, and upper abdominal lymph nodes. These changes resembled those frequently encountered in tuberculosis. However, their occurrence simultaneously in these organs in a patient dying of a febrile illness of two weeks' or less duration came to be relied upon as a highly dependable diagnostic combination of findings in fatal tularemia. This has come to be known as the "Mathews Triad" at this institution. In the early series confirmation of the diagnosis was almost always afforded by guinea pig inoculation. In the current series guinea pig inoculation failed to confirm the diagnosis in most cases and this has been attributed to the use of streptomycin.

Table 2 illustrates the frequency with

TABLE TWO
AUTOPSY FINDINGS

No.	Case	Age	Race	Sex	Bone Marrow	Liver	Spleen	Lung	Kidney (LNN)	Lymph Nodes	Day of Death
1	504777	40	C	M	+	+	+	+	+	+	* 20
2	521075	57	C	M	+	+	+	+	+	+	* 10
3	505742	66	C	F	+	+	+	+	+	0	* 14
4	505005	43	C	M	Not Done	+	+	+	+	0	* 12
5	517859	41	C	F	Not Done	+	0	0	+	0	* 39
6	519402	63	C	M	+	0	+	0	0	+	9
7	522134	66	C	M	Not Done	+	+	+	No Microscopic	0	6
8	508139	79	C	M	0	+	+	0	0	+	17
9	527959	17	C	M	Not Done	+	+	0	No Microscopic	0	*† 8
10	507909	46	C	M	+	+	+	0	+	+	7
11	500742	60	C	M	0	+	+	0	0	0	† 7

* Indicates streptomycin therapy

† Had acute renal failure clinically

‡ Injected guinea pig died—*Tularemia*

AUTOPSY SUMMARY

Organ	Bone Marrow	Liver	Spleen	Lung	Kidney	Lymph Nodes
Positive	5	10	10	5	6	5
Negative	2	1	1	6	4	6
Not Examined	4	0	0	0	1*	0

* Had Acute Renal Failure Clinically

which the liver, spleen, and lymph nodes as well as the bone marrow, lungs, and kidneys were involved.

TREATMENT

Prior to 1946, no specific drugs for tularemia existed and agents such as neoarsphenamine, mercurochrome, and sulfonamides were used with poor success. During the present series streptomycin and its analogue, dihydrostreptomycin, were widely accepted as the treatment of choice, and almost every case received one or the other drug. Since 1949, the latter has been used exclusively in this hospital. Penicillin was occasionally used, as were the broad spectrum antibiotics in conjunction with streptomycin.

Streptomycin was given in a dosage of from 1 to 3 grams daily. Divided doses of 250 to 500 mgm. were given usually, though sometimes a single daily dose was used. Generally the fever fell by lysis in three days, but sometimes fell by crisis. The duration of fever seemed to be the best indication of the response to treatment. Fever varied from one to forty days while on treatment, and the longer morbidity was associated with suppurative lymph nodes. No greater benefit was observed when the drug was given in dosage above 2 grams, and it is believed from this study that 1 gram daily represented a minimum adequate dose.

Chloramphenicol and chlorotetracycline were used occasionally alone or in combination with streptomycin. Chloramphenicol seemed to cause defervescence as effectively as streptomycin in the 10 instances in which it was used alone. Chlorotetracycline was used too seldom to evaluate. The duration of symptoms was usually shorter in those that were treated early, despite the fact that these often had high fever and severe symptoms. Apparently, if the organism is given time to localize extra days of drug therapy are required. No accurate conclusions can be drawn as to the number of days treatment should be continued after the patient is afebrile, but in these cases one week of treatment was adequate.

SUMMARY

Tularemia is a relatively common infection in man in northwest Louisiana. It is principally a febrile disorder with severe constitutional symptoms, but may be seen as a disease of only regional lymphadenopathy. The vectors discovered were ticks, rabbits, and rarely squirrels. It is to be emphasized that, more often than not, no vector was established (59 per cent of all cases).

The ulceroglandular form was the most common type of the disease accounting for 46 per cent of cases. Next most frequent was typhoidal with 36 per cent, then glandular (15 per cent), and oculoglandular (3 per cent).

The mortality rate was 7.5 per cent. Compared to the earlier survey in which 33 per cent died, the patients of the recent series fared well, demonstrating the effectiveness of streptomycin. Chloroamphenicol, when used, also seemed to be a good drug. The typhoidal variety of the disease bore a high mortality rate (19 per cent) despite the use of streptomycin. In general defervescence occurred in three days when one or more grams of streptomycin were given daily.

Acute renal failure was the most serious complication and it heralded death in the majority of the fatal cases.

CONCLUSIONS

1. Any patient, regardless of age, race, sex, or vector history, who is ill with a fever of undetermined origin, should bring to mind tularemia in the differential diagnosis, especially in northwest Louisiana. If necessary, treatment may be begun before the diagnosis is confirmed by the agglutination series since the disease may run a fatal course before the antibodies appear.

2. Streptomycin is an effective drug in this disease, as shown by a marked reduction in the mortality rate (33 per cent to 7.5 per cent) in two comparable studies at this institution.

3. Acute renal failure is frequently an important contributing factor to death in fatal cases.

THE PHYSICIAN, THE STATE
DEPARTMENT OF HEALTH
AND MORBIDITY REPORTING

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NEW ORLEANS

The primary reason for morbidity reporting by physicians, to the State Department of Health, is to alert the Department to the occurrence of diseases so that preventive and control measures may be instituted and to make the other physicians in the area aware of the occurrence.

Morbidity data disclose the prevalence in the state, or parish, of diseases dangerous to the public health, especially epidemic diseases. Early reporting by physicians is the first step in applying preventive and control measures. When diseases are not reported, the public health is placed in jeopardy; if reporting is delayed, the effectiveness of control measures is lessened. It is clear, therefore, that close collaboration between private practitioners and public health officials is essential for the protection of the health of our people.

When the disease reported is investigated and controlled, the data collected during the occurrence is assembled, studied and interpreted. This data is the raw material used by the Health Department to plan more effective programs for the prevention and control of the disease.

The collection of morbidity data by the United States Public Health Service was authorized by an Act of Congress in 1878. One year later, Congress appropriated money for the collection and publication of reports of notifiable diseases, the principal notifiable diseases being smallpox, plague, cholera, and yellow fever. In 1893, a Congressional act provided for weekly collection of morbidity data from state and municipal authorities. To facilitate

this collection, Congress by Act in 1902, directed the Surgeon General of the Public Health Service to provide forms for the collection, compilation and publication of morbidity data.

About 1914, state health officers were designated as Collaborating Epidemiologists and local officials, usually local health officers, were appointed as Assistant Collaborating Epidemiologists.

In 1919, at the request of the State and Territorial Health Authorities, the Public Health Service started supplying to all states, who requested it, report cards with penalty mailing privileges. Some states have not availed themselves of the use of these prepared report forms, but instead have used forms of their own devising and printing. From 1941 and until recently, Louisiana was one of these states.

This year, Louisiana was forced to revise its practice. Today, in this world of strife, tension and catastrophes, a reporting system that will work smoothly and effectively in times of emergency is a necessity. The more routinized and standardized a practice is, the more apt it is to function properly under stress. Complete, accurate, standardized reporting through established channels is of increasing importance as the threat of biological and atomic warfare approaches reality. For many years, the State Board of Health has determined the diseases which Louisiana physicians are to report and has developed, printed, and distributed forms for the reporting of these diseases.

On January 1, 1956, the State Department of Health abandoned its report forms and requested the Public Health Service to provide a supply of morbidity report forms for use by physicians. This will bring Louisiana practice in accord with the morbidity reporting practices of most of the States and provide for the standardization so gravely needed.

The new report forms have been received by the State Department of Health. These have been bound into books of 25

From the Section of Epidemiology, Louisiana State Department of Health.

PHS-2430 9-55		CONFIDENTIAL CASE REPORT		Form approved, Budget Bureau No. 68-R581.	
DISEASE		DATE OF REPORT		DATE OF ONSET	
PATIENT'S NAME		AGE	SEX	RACE	
ADDRESS	STREET NO. (R. F. D. if rural)			APT. NO.	
	CITY OF COUNTY				
NAME OF HOUSEHOLDER					
REMARKS					
NAME OF REPORTING PHYSICIAN, HOSPITAL, OR OTHER AUTHORIZED PERSON					
OFFICE ADDRESS					
REPORT BY NUMBERS OF CASES ONLY:					
USE REVERSE SIDE FOR SPECIAL INFORMATION FOR TB AND VD <input type="checkbox"/> CHECK HERE IF ADDITIONAL CARDS ARE NEEDED					

Figure 1.—Front—Confidential Case Report Card.

TUBERCULOSIS		
IS THIS CASE REPORTED AS A RESULT OF AN X-RAY SURVEY? YES <input type="checkbox"/> NO <input type="checkbox"/>		IF THIS CASE IS BEING REPORTED AFTER DEATH, GIVE DATE OF DEATH.
FORM AND EXTENT PULMONARY MINIMAL <input type="checkbox"/> MODERATELY ADVANCED <input type="checkbox"/> FAR ADVANCED <input type="checkbox"/> OTHER, SPECIFY _____ NONPULMONARY, SPECIFY _____	ACTIVITY STATUS ACTIVE <input type="checkbox"/> ACTIVITY UNDETERMINED PROBABLY ACTIVE <input type="checkbox"/> PROBABLY INACTIVE <input type="checkbox"/> INACTIVE <input type="checkbox"/>	BACTERIAL STATUS POSITIVE <input type="checkbox"/> NEGATIVE <input type="checkbox"/> UNKNOWN <input type="checkbox"/> BY— SMEAR <input type="checkbox"/> CULTURE <input type="checkbox"/> ANIMAL INOCULATION <input type="checkbox"/>
VENEREAL DISEASES		
SYPHILIS (Check stage) <input type="checkbox"/> PRIMARY OR SECONDARY <input type="checkbox"/> EARLY LATENT (Under 4 years duration) <input type="checkbox"/> LATE LATENT (Over 4 years duration) <input type="checkbox"/> LATE—Type <input type="checkbox"/> CONGENITAL	OTHER VENEREAL DISEASE (Check type) <input type="checkbox"/> GONORRHEA <input type="checkbox"/> CHANCROID <input type="checkbox"/> GRANULOMA INGUINALE <input type="checkbox"/> LYMPHOGRANULOMA VENEREUM	HAS THIS PATIENT BEEN INTERVIEWED FOR CONTACTS? <input type="checkbox"/> YES <input type="checkbox"/> NO

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE—Public Health Service

GPO: 1955-O-364475

Figure 2.—Back—Confidential Case Report Card.

cards each and a supply has been mailed to each physician licensed to practice medicine in Louisiana. The form entitled "Confidential Case Report", is printed on a 3" x 5" card (Figure 1—Front; Figure 2—Back) and is to be mailed by the phy-

sician when completed in a sealed, penalty privilege envelope, to the local health department.

The list of Reportable Diseases for Louisiana as established by the State Board of Health is as follows:

REPORTABLE DISEASES**GROUP 1—BACTERIAL**

1. Brucellosis (Undulant Fever)
2. Diphtheria
3. Meningococcal Meningitis and Meningococcemia
4. Salmonellosis (includes Paratyphoid and all other Salmonella)
5. Pertussis (Whooping Cough)
6. Rheumatic Fever
7. Shigellosis
8. Streptococcal Sore Throat (includes Scarlet Fever)
9. Tetanus
10. Tuberculosis—Pulmonary
11. Tuberculosis—Other Types (Specify)
12. Tularemia
13. Typhoid Fever

VIRUS

14. Infectious Encephalitis (Primary Virus Mosquito-borne)
15. Infectious Hepatitis (includes Serum Hepatitis)
16. Measles
17. Poliomyelitis—Paralytic
18. Poliomyelitis—Non-Paralytic
19. Rabies in Man

RICKETTSIAL

20. Rocky Mountain Spotted Fever
21. Typhus Fever (Endemic)

PROTOZOAN**PARASITIC**

23. Trichinosis

VENEREAL

24. Chancroid
25. Gonorrhea
26. Granuloma Inguinale
27. Lymphopathia Venereum
28. Ophthalmia Neonatorum (Gonorrheal Ophthalmia)
29. Syphilis

OTHER

30. Cancer
31. Occupational Diseases (Classify by Cause)
Report Dermatoses only if two or more cases)

GROUP 2—ANY case of UNCOMMON DISEASE

32. Actinomycosis
33. Anthrax
34. Botulism
35. Cholera
36. Dengue
37. Glanders
38. Histoplasmosis
39. Leprosy
40. Leptospirosis (includes Weil's Disease)
41. Malaria

42. Plague
43. Psittacosis
44. Q. Fever
45. Rat-Bite Fever
46. Relapsing Fever
47. Smallpox
48. Toxoplasmosis
49. Trachoma
50. Typhus Fever (Epidemic)
51. Yellow Fever

GROUP 3—Report when occurring in UNUSUAL NUMBERS (Need not be reported individually by name)

52. Ascariasis
53. Chickenpox
54. Conjunctivitis, acute infectious (pink eye)
55. Diarrhea of new born (epidemic)—if 2 or more cases
56. Food Poisoning
57. German Measles
58. Hookworm
59. Impetigo Contagiosa
60. Influenza
61. Mumps
62. Ringworm of the Scalp
63. Scabies

GROUP 4—Reportable only by Laboratory Examination

64. Rabies in Animals

Certain of the diseases listed above are to be reported on an individual basis with adequate identifying data; certain others are to be reported only when they occur in unusual numbers. Spaces are provided on the new report form for notification concerning both types of diseases.

The Department of Health is studying the use of this new form and the development of practices which will result in earlier, more complete reporting. Suggestions from practicing physicians would be helpful.

The State Health Officer is the Public Health Service collaborating epidemiologist for Louisiana, while the Directors of the local health units are usually the assistant collaborating epidemiologists.

To apply prevention and control measures early, the parish health unit must be advised of the occurrence of a reportable disease as quickly as possible. The easiest and quickest way for a physician to report is to telephone the local health unit. Certain specific information, depending on the disease reported, will then be requested by the person handling this call. The Health Unit personnel begin the use of the information immediately. Simul-

taneously, the same information is forwarded to the Section of Epidemiology, State Department of Health, where a central control record and surveillance system is set up to assist the local health unit in the establishment of all necessary control procedures.

When the presumptive clinical diagnosis is confirmed by laboratory procedures, the information concerning the disease is referred to the Tabulating and Analysis Section for processing, which includes a report of the occurrence of the disease to the National Office of Vital Statistics.

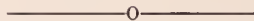
To be most useful, every space on the report form should contain pertinent and appropriate information.

SUMMARY

The State Department of Health is using a new type morbidity report form. These forms have been distributed to physicians. Physicians should advise the Parish Health Unit in their parish by report form and by telephone of the occurrence of any reportable diseases. The parish and state departments of health, by these reports, will be alerted to the occurrence, in the community, of diseases dangerous

to the public health. They will immediately investigate the occurrence and institute such control and surveillance measures as are indicated. The data collected during the investigation will be assembled, studied and interpreted and the lessons learned applied to the development of more effective preventive and control measures. The data will also be forwarded to the Tabulating and Analysis Section of the Depart-

ment and to the National Office of Vital Statistics where it will be tabulated and published. These published reports and the reports of investigations by the Section of Epidemiology of the State Department of Health are available to physicians on request. This statistical information is useful to physicians in medical practice as well as to physicians engaged in medical research.



The Journal of the Louisiana State Medical Society

Established 1844

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The Journal does not hold itself responsible for statements made by any contributor.

THE CONTROL OF POISONING

The control of poisoning is a medical problem which is increasing in frequency and diversity. When poisoning has occurred the immediate situation involves recognition and therapy. The extent of poisoning can be judged by the occurrence of 1440 cases in the United States in 1952, in which the death certificate gave accidental poisoning as the cause of death. Accidental poisoning kills 500 children over the nation annually. Among these, about one third result from drugs. It has been reported that accidental chemical

poisoning is the third leading cause of death in children under six in New York City, and more children die from such causes than from measles, German measles, rheumatic fever, streptococcal infections, poliomyelitis, diphtheria, whooping cough and scarlet fever. Children's death rates from the ingestion of poison are four times higher in the United States than in England.

It is estimated that although 75 per cent of all reported cases may be treated by gastric lavage, it is still necessary that the physician have, whenever possible, access to information concerning the pharmacology of poisons and adequate plans for therapy.

A report by Bernard E. Conley, Secretary of the AMA Committee on Toxicology indicates some 250 thousand trade name substances are now in the market. The extent to which any one of these may become a source of poisoning will be an unknown quantity for the physician. Recognition of this situation led to the establishment of the first Poison Control center in Chicago in 1953. This led to the establishment of similar centers in many metropolitan areas over the United States. In New Orleans, to aid in these problems, the Office of the Coroner of Orleans Parish maintains a Poison Information Bureau. This Bureau is for physicians only and only information is offered; treatment is not given. This service may be obtained by calling New Orleans, GAlvez 6100 or GAlvez 2863 any time of the day or night. These pathologists make available their experience and the resources of their library of toxicology.

In association with the activities of certain of these centers manuals have been produced which are available and which give valuable information for the physician.

Even though mechanical removal of the poison by lavage, or attempted neutralization of the effect of the poison by physiological means, may be energetic and well directed, still the results as the death totals show leave much to be desired. Obviously, prevention and control are far

better than treatment. In the matter of prevention the problem spreads beyond the medical field alone and becomes one of significance in all phases of community activity — engineering, industry, public health, sanitation, education, law enforcement, housing, social work, and investigative research.

It is necessary that the public become conscious of poisoning in general as a problem, in order that the toxic potentialities of a particular product may be manifest from the time it leaves the engineering phase until it reaches the physician in the industry or the household where its danger may become manifest. It is obvious at the present time that the

weakest point in this chain of circumstances is the household.

The Board of Trustees of the American Medical Association has requested the Committee on Toxicology to draft recommended legislation on the labeling of any chemicals possibly harmful, which are not now regulated. Such a law, if enacted by a sufficient number of states, would give legal assistance in poisoning control, and would also focus attention, generally, upon poisoning as a community hazard.

The most effective control of the problem, however, will only result from proper education as to the proper handling and storing of all such potentially toxic substances.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

1957 ANNUAL MEETING

At a meeting of the Committee on Arrangements held February 20, 1957, Dr. J. O. Weilbaeher, Jr., Chairman, announced that final plans were ready for the State Society meeting in May. Reports of subcommittee chairmen were received and budget expenditures were reviewed. Progress to date indicates promise of a most successful meeting. Dr. Weilbaeher has asked for keen cooperation of all committeemen with their respective chairmen in order to accomplish their anticipated plans.

Essayists will be asked to submit to the Secretary-Treasurer a summary or outline of their topic in order to aid in the publicity for this meeting. A careful outline will do much to expedite the work of the committee on publicity and assure adequate press coverage for our meeting.

All members attending the meeting are urged to participate in all functions. Members are particularly urged to attend as many of the scientific sessions as possible and to inspect the technical and scientific displays.

The physical plan for the placing of technical exhibits will be somewhat different this year. When passing these exhibits, members are strongly urged to visit with representatives of these commercial firms whose interest in the State Society is evidenced by their participation in the meeting. These exhibitors do much for the Society by helping to defray a large part of the financial burden of having a state meeting.

Reciprocal courtesy in visiting with them does much to encourage them to maintain interest in the Society and at the same time doctors are greatly benefitted by valuable information furnished by these companies.

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NOTABLE INCREASE IN HEALTH INSURANCE COVERAGE

Americans who are covered by health insurance policies written by insurance companies received a total of \$1.5 billion in benefits for the first nine months of 1956, the Health Insurance Insti-

tute reported. This figure, the Institute said, represents an 18% increase in benefit payments over the comparable period for 1955, and is based upon a survey of companies in the United States handling health insurance policies.

From January through September 1956, persons covered under group health insurance policies received a total of \$1.1 billion in benefits, a gain of 19.6% while those protected under individual insurance policies were paid over \$450 million, or 12.5% over 1955. Both systems of coverage, explained the Institute, are designed by insurance companies to help the insured pay the hospital and doctor bills incurred through illness, or to help replace income lost through sickness and disability.

Payments by insurance companies to defray hospital care expenses, the Institute further reported, in listing the benefits by type of service, amounted to over \$669 million, including major medical benefits, with \$488 million going to persons covered under group programs, and \$181 million paid to persons holding individual policies.

Surgical expense benefits, which help pay for the cost of operations and surgeon's fees, amounted to more than \$273 million, including major medical benefits, with \$216 million received by persons protected under group policies, and \$57 million paid by insurance companies to those holding individual surgical expense policies.

To help cover the cost of medical care and treatment other than surgery, the companies paid out a total of \$48 million to people included under medical expense and major medical expense insurance policies. Benefits for group medical policies amounted to \$40 million, while payments under individual policies came to \$8 million.

A fourth type of coverage, available only from insurance companies, was also reported on in the survey. Benefit payments to persons protected against loss of income due to sickness or disability came to over \$519 million. \$337 million paid to

persons insured under group plans, and \$181 million going to those protected by individual policies.

Persons protected under major medical expense policies alone received over \$44 million by the third quarter of 1956, with over \$42 million paid out to those people covered by group policies, and individual policyholders receiving a total of almost \$2 million. Introduced by the insurance business in 1948, major medical expense is designed as an "across-the-board" health insurance coverage, to help absorb the cost of major, or catastrophic illness. Policies are written to supplement the basic hospital, surgical, and medical coverages, and also as a non-supplemental medical care insurance, both of which include deductible and co-insurance features.

Payments for the specific services rendered for medical care and treatment which are covered under major medical programs were:

Hospital	\$21,578,000
Surgical	12,575,000
Medical	5,231,000
Nursing Services	2,841,000
Drugs	824,000
Other (including ambulance, transportation, etc.)	824,000

In releasing the results of the survey of health insurance benefit payments made by insurance companies throughout the country, the Health Insurance Institute stated that the continued growth of voluntary health insurance demonstrates the need and desire of the American people to protect themselves against the cost of illness. There are over 60 million persons today covered by some form of health insurance through insurance company programs, which is over half of the total insured population.

The Health Insurance Institute is the central source of information for the nation's insurance companies serving the public through health insurance.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

**RUDOLPH MATAS LECTURESHIP
SPONSORED BY NU SIGMA NU**

The tenth annual Rudolph Matas Lectureship, sponsored by the Tulane University Beta Iota Chapter of Nu Sigma Nu, will have as its guest speaker this year Dr. Charles C. Higgins, who will speak on "Exstrophy of the Bladder; Review of 155 Cases".

This lecture will be delivered at 4:00 p.m., Friday, April 12, 1957, in Hutchinson Memorial Auditorium, Tulane University, 1430 Tulane Avenue, New Orleans.

Dr. Charles Clare Higgins received his Medical Degree from Washington University and is Head of the Department of Urology, Cleveland Clinic Foundation Hospital, Cleveland, Ohio. He is Chairman of the Board of Governors of the American College of Surgeons and is a member of the American Board of Urology, American Urological Association, American Association of Genito-Urinary Surgeons, Clinical Society of Genito-Urinary Surgery and the Sociedad Venezolana de Urologica.

Following the lecture there will be a banquet for members and alumni of Nu Sigma Nu.

**NATIONAL RESUSCITATION SOCIETY, INC.
CLINICAL HYPOXIA**

Monthly intensive week end courses in clinical hypoxia are held under the auspices of the National Resuscitation Society, Inc. (formerly, Society for the Prevention of Asphyxial Death, Inc.), matriculation fee \$50. These courses feature laryngoscopy and intubation for the prevention and treatment of respiratory and cardiac arrest, and will be held April 5-6, May 3-4, and June 7-8. For details and application form write, Secretary, National Resuscitation Society, Inc., 2 East 63rd Street, New York 21, N. Y.

**LOUISIANA HEART ASSOCIATION
ANNUAL MEETING — SCIENTIFIC SESSION
CONFEDERATE MEMORIAL HOSPITAL**
**Shreveport, Louisiana
May 15, 1957**

9:00 A. M.

Symposium

"Prevention and Management of Heart Failure"
Dr. Joe E. Holoubek, Shreveport, President, Louisiana Heart Association, presiding.

9:00 A. M.

"General Principles and Their Application"
Dr. Harold Jacobs, Lafayette

9:30 A. M.

"Clinical Use of Digitalis"
Dr. William Luikart, Baton Rouge

10:00 A. M.

"Use of Other Drugs"
Dr. John Worley, Alexandria

10:30 A. M.

"Question and Answer Period

10:50 A. M.

INTERMISSION

11:00 A. M.

Special Lecture

"Coronary Disease"

Dr. Robert H. Bayley, Professor of Medicine, Oklahoma University School of Medicine

12:00 Noon

"Bacterial Endocarditis"

Dr. David Buttross, Lake Charles

12:30 P. M.

Question and Answer Period

12:45 P. M.

LUNCH

Speaker

Dr. H. S. Mayerson, Chairman, Department of Physiology, Tulane University and vice-president, Louisiana Heart Association

Dr. George Anderson, president-elect, Louisiana Heart Association, presiding.

2:30 P. M.

"Evaluation of Surgical Risk in Patients With Heart Disease"

Dr. Herbert Tucker, Shreveport

3:00 P. M.

Special Lecture

"Myocardial Revascularization By a New and Innocuous Approach"

"A Summary of the Present Status Of Valvular Surgery Illustrated by Cinematography"

Dr. Robert Glover, Director, Cardiovascular Research Laboratory, Presbyterian Hospital, Philadelphia

4:00 P. M.

Special Lecture

"The Diagnosis and Management of the Child with Congenital Heart Disease".

Dr. Robert E. Wells, Attending Cardiologist, Attending Pediatrician, St. Christopher's Children's Hospital; Assistant Professor of Pediatrics, Temple University

5:00 P. M.

ADJOURNMENT

7:30 P. M.

"Anaesthesia for Cardiac Surgery"

Dr. John Adriani, Director, Anaesthesiology, Charity Hospital, New Orleans and Professor of surgery (anaesthesia) Tulane and LSU schools of medicine

Dr. George Miles, clinical instructor in surgery, LSU school of medicine

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

The Woman's Auxiliary to the Orleans Parish Medical Society held its monthly meeting, Wednesday, February 13, at the Orleans Club. Mr. Scoop Kennedy, Staff Member of WDSU, was the guest speaker.

In the receiving line were Mrs. Abe Golden, president, and Honorary members of the organization, Mms. Herman B. Gessner, Chaille Jamison, Marcus Koelle, William Kohlmann, John W. Linder, John Musser, Ramon N. Oriol, Cassius Peacock, Mendel Silber, C. Grenes Cole, and Roy B. Harrison.

Those on the standing Hostess Committee are Mms. Peter Everett, Aynaud Hebert, L. Sidney Charbonnet, Joseph Hountha, George Hauser, Ashton Thomas, Benjamin Morrison, John Gooch, Abram Goldsmith, William Rein, Louis J. Dubos, W. C. Rivenbark, Merrell O. Hines and George B. Grant.

Mrs. Robert C. Kelleher
Publicity chairman

MID-YEAR EXECUTIVE BOARD MEETING

Mrs. W. A. K. Seale, President, Woman's Auxiliary to the Louisiana State Medical Society, presided at the Mid-Year Executive Board Meet-

ing, which was held at the Bentley Hotel, in Alexandria, on January 22, 1957.

A panel on the problems of presidents of big, little, old, and new auxiliaries followed the business session. The participating members were Mrs. Harold J. Quinn, Shreveport, Caddo Auxiliary president, Mrs. H. Wayne Richmond, Oakdale, past-president of the Allen Parish Auxiliary, and Mrs. Eugene Countiss, president-elect of the Orleans Parish Auxiliary. Mrs. Boni J. De Laoreal, president-elect, was moderator.

The following were elected to the Nominating Committee: Mrs. Henry Jolly, Baton Rouge, Chairman; Mrs. Robert Rougelot, New Orleans; Mrs. Creighton Shute, Opelousas; Mrs. Roy Carl Young, Shreveport; Mrs. Arthur Long, Baton Rouge; Mrs. A. N. Evans, Alexandria; Mrs. Ben Cobb, Monroe.

At a luncheon following the executive session Dr. Paul D. Abramson, President, Louisiana State Medical Society, addressed the board and participating members on the importance of good public relations.

Mildred G. Carter,
Press and Publicity Chairman.

BOOK REVIEWS

Nerve Blocks; by John Adriani M. D., Springfield, Illinois, Charles C Thomas, 1954, Pp. 265. Price \$6.50.

This book is written in outline form and includes the most commonly employed blocks. It is well illustrated and is ideal for teaching or reference in regional anesthesia. From the clinicians' and anesthesiologists' viewpoint it is both practical and concise in its approach. It is recommended for the library of all interested in the diagnostic, therapeutic, or anesthetic use of nerve blocks.

CHARLES C. ABBOTT, M. D.

PUBLICATIONS RECEIVED

W. B. Saunders Co., Phila.: The Physician-Writer's Book, Tricks of the Trade of Medical Writing, by Richard M. Hewitt, M. D.; Pediatric Cardiology, by Alexander S. Nadas, M. D.; Clinical Use of Radioisotopes, by William H. Beierwaltes, M. D., Philip C. Johnson, M. D., and Arthur J. Solari, B. S.

Charles C Thomas, Publisher, Springfield, Ill.: Practical Psychiatry for Industrial Physicians, by W. Donald Ross, M. D.; Fundamentals of Clinical Neurophysiology, by Paul O. Chatfield, M. D.; Stress and Strain in Bones, Their Relation to Fractures and Osteogenesis, by F. Gaynor Evans, Ph.D., edited by Otto Glasser, Ph.D.

TRUE ANTICHOLINERGIC ACTION

Pro-Banthine® Inhibits Excess Parasympathetic Stimuli in Peptic Ulcer

Medical literature now contains more than 500 references to the beneficial role of Pro-Banthine Bromide (brand of propantheline bromide) and Banthine® Bromide (brand of methantheline bromide) as evidenced by a marked healing response of peptic ulcers. Rapid symptomatic improvement, particularly with reference to pain relief, is followed by roentgenographic demonstration of crater filling.

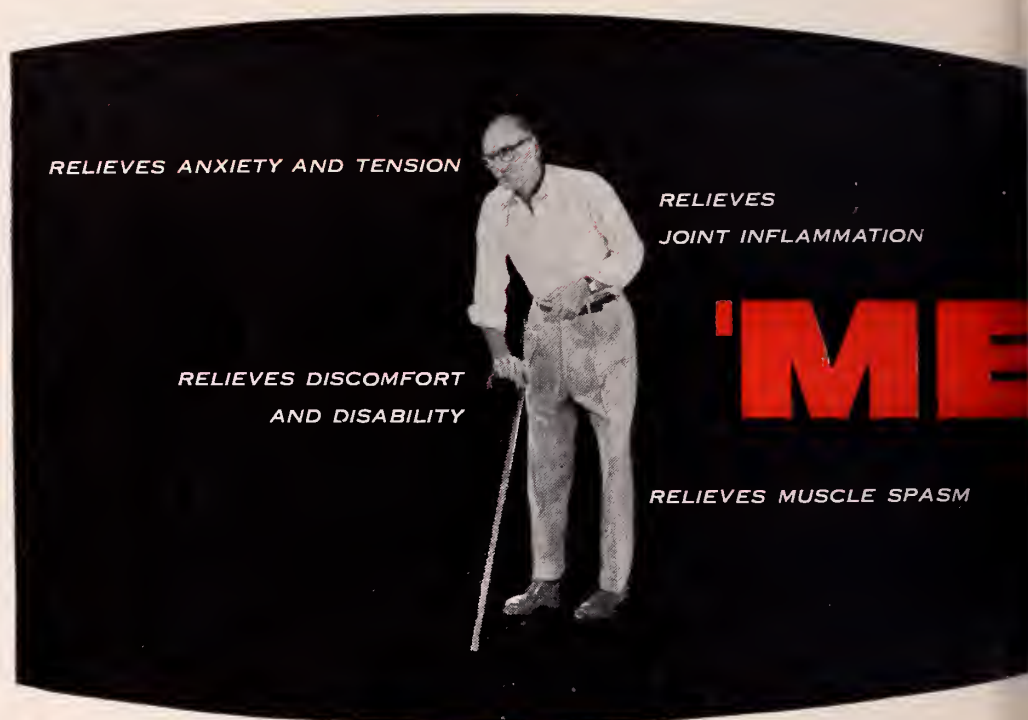
The therapeutic action of Pro-Banthine in

decreasing hypermotility and hyperacidity, together with the remarkable early subjective benefit, is a desired approach in the management of ulcers.

The initial suggested dosage is one tablet, 15 mg., with meals and two tablets at bedtime. An increased dosage may be necessary for severe manifestations and then two or more tablets four times a day may be indicated. G. D. Searle & Co., Chicago 80, Illinois, Research in the Service of Medicine.

SEARLE

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RELIEVES ANXIETY AND TENSION

RELIEVES JOINT INFLAMMATION

RELIEVES DISCOMFORT AND DISABILITY

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RELIEVES MUSCLE SPASM

Each Multiple Compressed Tablet of MEPROLONE provides the inseparable antiarthritic, antirheumatic benefits of:

1. *Prednisolone buffered*—the newest and most potent of the “predni-steroids” for prompt relief of joint pain and arrest of the destructive inflammatory process.

2. *Meprobamate*—the newest and safest of the muscle-relaxant tranquilizers for profound relaxation of skeletal muscle in spasm.

Tolerance to this combination is good because there is little likelihood of sodium retention, potassium depletion or gastric distress with buffered prednisolone, and meprobamate rarely produces significant side effects in therapeutic dosage.

An additional important therapeutic benefit, often overlooked, stems from the tranquilizing action of meprobamate. This component of MEPROLONE relieves mental tension and anxiety so often manifest in arthritics, making them more amenable to other rehabilitation measures.

INDICATIONS: A wide variety of conditions, in which four symptoms predominate: *a)* inflammation *b)* muscle spasm *c)* anxiety and tension *d)* discomfort and disability; i.e., rheumatoid arthritis, rheumatoid spondylitis (Marie-Strümpell disease), Still's disease, psoriatic arthritis, osteo-

Therapeutic benefits of MEPROLONE compared with traditional antiarthritic

	relieves pain	suppresses inflammation	relaxes muscle	eases anxiety	Imparts sense of well-being
Salicylates	✓	✓			
Muscle relaxants			✓ ¹		
Tranquillizers				✓ ¹	
Steroids	✓	✓			✓
MEPROLONE	✓	✓	✓	✓	✓

¹ Meprobamate is the only tranquilizer with muscle-relaxant action.

arthritis, bursitis, synovitis, tenosynovitis, myositis, fibrositis, fibromyositis, neuritis, acute and chronic low back pain, acute and chronic primary and secondary fibrositis and torticollis, intractable asthma, respiratory allergies, allergic and inflammatory eye and skin disorders (as maintenance therapy in disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis and scleroderma).

SUPPLIED: Multiple Compressed Tablets in bottles of 100 in two formulas as follows: MEPROLONE-1—1.0 mg. of prednisolone, 200 mg. of meprobamate and 200 mg. of dried aluminum hydroxide gel. MEPROLONE-2—provides 2.0 mg. of prednisolone in the same formula.

NO OTHER
ANTIRHEUMATIC
PRODUCT
PROVIDES AS MANY
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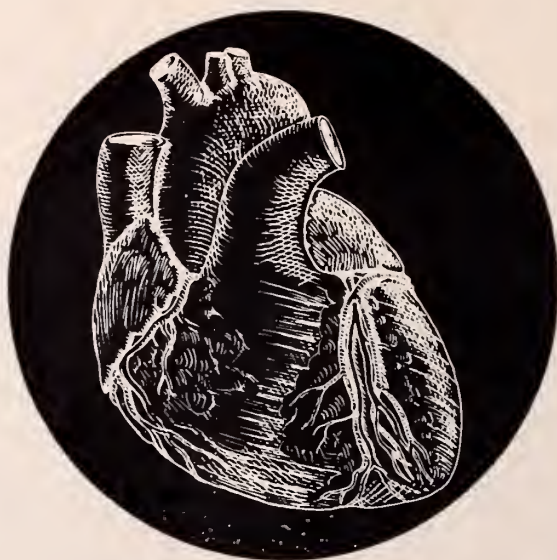
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THE ONLY
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ANTIARTHRITIC
THAT SIMULTANEOUSLY
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2. JOINT INFLAMMATION
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'LANOXIN'^{*} brand **DIGOXIN**

provides the
greater margin of safety
of a brief latent period
and optimum rate of elimination

for dependable
digitalization and maintenance

Tablets: 0.25 mg. (white) and 0.5 mg. (green)

Pediatric Elixir: 0.05 mg. in each cc.

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*'Lanoxin' was formerly known as Digoxin 'B. W. & Co.' The new name has been adopted to make easier for everyone the distinction between digoxin and digitoxin.



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ACHROCIDIN is indicated for prompt control of undifferentiated upper respiratory infections in the presence of questionable middle ear, pulmonary, nephritic, or rheumatic signs; during respiratory epidemics; when bacterial complications are observed or expected from the patient's history.

Early potent therapy is provided against such threatening complications as sinusitis, adenitis, otitis, pneumonitis, lung abscess, nephritis, or rheumatic states.

Included in this versatile formula are recommended components for rapid relief of debilitating and annoying cold symptoms.

Adult dosage for ACHROCIDIN Tablets and new, caffeine-free ACHROCIDIN Syrup is two tablets or teaspoonfuls of syrup three or four times daily. Dosage for children according to weight and age.

Available on prescription only

*symptomatic
relief... plus!*

ACHROCIDIN

TETRACYCLINE-ANTIHISTAMINE-ANALGESIC COMPOUND

*Tablets
and
Syrup*

Each tablet contains:

ACHROMYCIN® Tetracycline	125 mg.
Phenacetin	120 mg.
Caffeine	30 mg.
Salicylamide	150 mg.
Chlorothen Citrate	25 mg.

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children are often this eager...

Because Rubraton tastes so good, most children actually look forward to taking it. What better way could there be for providing these essential nutrients?

Rubraton is indicated for combatting many common anemias and for correcting mild B complex deficiency states. It may also prove useful for promoting growth and stimulating appetite in poorly nourished children. (Not intended for treatment of pernicious anemia.)

Dosage: 1 or 2 teaspoonfuls t.i.d.

Supply: Bottles of 8 ounces and 1 pint.

1 teaspoonful (5 cc.) supplies:

Elemental Iron	38 mg.
(as ferric ammonium citrate and colloidal iron)	
Vitamin B ₁₂ activity concentrate	4 mcg.
Thiamine mononitrate	1.0 mg.
Riboflavin	1.0 mg.
Niacinamide	5 mg.
Pantothenic acid (Panthenol)	1.5 mg.
Pyridoxine hydrochloride	0.5 mg.

Alcohol content: 12 per cent

RUBRATON

SQUIBB IRON, B COMPLEX AND B₁₂ VITAMINS ELIXIR

*RUBRATON® IS A SQUIBB TRADEMARK

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Squibb Quality—the Priceless Ingredient.



NOW—EFFECTIVE STEROID HORMONE
THERAPY OF RHEUMATIC AFFECTIONS
WITH GREATER SAFETY AND ECONOMY

PABALATE[®]-HC



*Pabalate with
Hydrocortisone*

Clinical evidence indicates that, in Pabalate-HC, the synergistic antirheumatoid effects of hydrocortisone,

salicylate, para-aminobenzoate, and ascorbic acid achieve satisfactory remission of symptoms in *up to 85% of cases studied*

—with a much higher degree of safety

—even when therapy is maintained for long periods

—at significant economy for the patient

Each tablet of Pabalate-HC contains 2.5 mg. of hydrocortisone — 50% more potent than cortisone, yet not more toxic.

FORMULA

In each tablet:

Hydrocortisone (alcohol) 2.5 mg.
Potassium salicylate 0.3 Gm.
Potassium para-aminobenzoate.. 0.3 Gm.
Ascorbic acid 50.0 mg.

DOSAGE: Two tablets four times daily.
Additional information on request.

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PRESCRIPTION
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A. H. ROBINS CO., INC. RICHMOND 20, VIRGINIA
Ethical Pharmaceuticals of Merit since 1878



a true calmative

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Ectylurea, AMES
(higher melting isomer of
2-ethylcrotonylurea)

the power of gentleness

helps patients face everyday anxieties and tensions

*"...mild action promotes an over-all calmness..."**

New and Different • not a hypnotic-sedative—unrelated to any available chemopsychotherapeutic agent • no evidence of cumulation or habituation • does not cause gastric hyperacidity • unusually wide margin of safety—no significant side effects

Dosage: 150-300 mg. three or four times daily.

Supplied: 300 mg. scored tablets, bottles of 48.

*Ferguson, J. T.: J. Am. Geriatrics Soc. 4:1080, 1956.



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Meat Protein...

and the Many Physiologic Functions of Its Amino Acids

The amino acids supplied by meat protein function in many vital ways in addition to their well-known role in the growth and maintenance of tissues. They participate in the body economy as precursors of hormones, vitamins, enzymes, and other physiologic agents.*

Some of the important amino acids supplied by the protein of meat include: tryptophan (utilized for the endogenous production of niacin); tyrosine (the precursor of thyroxine and triiodothyronine); phenylalanine (converted to melanin, a pigment found in the skin, hair, retina, and other tissues; both phenylalanine and tyrosine are precursors of the hormones noradrenalin and adrenalin); glycine (participates in the formation of glutathione, a tripeptide important in tissue oxidation, in the biosynthesis of glycocholic acid, and in the production of purines, uric acid, and porphyrins used structurally for hemoglobin, cytochromes, and iron-containing enzymes); methionine (an important lipotropic agent; participates in transmethylation processes in which creatine, adrenalin, and choline phospholipids are formed).

Top quality protein, as supplied by meat, yields important amino acids for participation in these and other important functions. The excellent balance of available amino acids is an outstanding feature of meat protein.

*Geiger, E.: Digestion, Absorption and Metabolism of Protein, in Wohl, M. G., and Goodhart, R. S.: Modern Nutrition in Health and Disease, Philadelphia, Lea & Febiger, 1955, pp. 98-143.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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Overcoming Today's No. 1 Nutritional Problem



Knox "Choice of Foods" Diet Can Help Your
HYPERTENSIVE Patients to Reduce and Stay Reduced



1. Color coded diets of 1200, 1600 and 1800 calories are based on nutritionally tested Food Exchanges.¹

2. The easy-to-use Food Exchanges (called Choices in booklet) simplify diet management by eliminating calorie counting.

3. Diets promote accurate adjustment of caloric levels to the special needs of the patient yet allow each individual considerable latitude in the choice of foods.

4. More than six dozen appetizing, low-calorie recipes are described in the last fourteen pages of the diet booklet.

1. The Food Exchange Lists referred to are based on material in "Meal Planning with Exchange Lists" prepared by Committees of the American Diabetes Association, Inc., and The American Dietetic Association in cooperation with the Chronic Disease Program, Public Health Service, Department of Health, Education and Welfare.

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Professional Service Dept. SJ-23
Johnstown, N. Y.




Please send me dozen copies of the new, illustrated Knox Reducing booklet based on Food Exchanges.

Your Name and Address.

ANNOUNCING

CATHO



more effective
in clinically
important infections
than any other
antibiotic

FOR MOST INFECTIONS

CATHOCILLIN



(NOVOBIOCIN-PENICILLIN G, MERCK)

THE ANTIBIOTIC PRODUCT MOST LIKELY TO BE EFFECTIVE

COMPARE THESE ADVANTAGES:

Proved effectiveness in the largest number of clinically important infections including those caused by antibiotic-resistant staphylococci and proteus.

Therapeutic, bactericidal blood levels are promptly achieved.

Exceptionally well tolerated; patient sensitivity reactions are rare at recommended dosage.

No yeast or fungal super-infections nor any antibiotic-induced enteritis, vaginitis or proctitis have been reported following CATHOCILLIN.

No problems of cross-resistance have been encountered with CATHOCILLIN.

The normal intestinal flora is not disturbed by CATHOCILLIN.

DOSE: for adults—two capsules q.i.d.; for children under 100 lbs.—dosage in proportion to weight (e.g. one capsule q.i.d. for a child weighing 50 lbs.).

CONSIDER CATHOCILLIN FIRST

—for these clinically important infections: tonsillitis; pharyngitis; pneumonia; otitis media; cervical lymphadenitis; streptococcal sore throat; infected tooth sockets; Vincent's infection; acne and superficial skin infections; impetigo; boils, furuncles and carbuncles; lung abscess; bronchitis; mastitis; osteomyelitis; wound infections; postoperative wound infections and infected lacerations; staphylococcal enteritis, staphylococcal diarrhea of the newborn; peritonitis (caused by susceptible organisms); pelvic inflammatory disease; gonorrhea; gonococcal arthritis; urethritis; scarlet fever; erysipelas.

SUPPLIED: Blue and white capsules of 'CATHOCILLIN'—each containing 125 mg. of 'CATHOMYCIN' (as Sodium Novobiocin, Merck) and 75 mg. (125,000 units) Potassium Penicillin G; bottles of 16.

In one prescription the one antibiotic product most likely to be effective



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for sturdier growth and

**Optimal
Resistance
to Infection**



Sturdy growth of the infant and resistance to disease depend largely on nutritional status.

Undernourished or premature infants can be advanced toward optimal resistance by properly improved nutrition. Lowered resistance of a healthy-appearing infant not infrequently is due to subclinical deficiencies; such an infant, too, needs a complete formula.

The completeness of Pelargon's formula—mildly acidified with lactic acid—requires no supplementation and assures optimal nutrition for normal infants, those with digestive difficulties, and premature or marasmic infants.



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NESTLÉ—*A time-honored name in the
field of infant nutrition*

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Professional Products Division

White Plains, New York

outstanding
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stimulant

INCREMIN

LYSINE-VITAMIN SUPPLEMENT LEDERLE

Problem-eaters, the underweight, and generally below-par patients of all ages respond to INCREMIN.

INCREMIN offers l-Lysine for protein utilization, and essential vitamins noted for outstanding ability to stimulate appetite, overcome anorexia.

Specify INCREMIN in either Drops (cherry flavor) or Tablets (caramel flavor). Same formula. Tablets, highly palatable, may be orally dissolved, chewed, or swallowed. Drops, delicious, may be mixed with milk, milk formula, or other liquid; offered in 15 cc. polyethylene dropper bottle.

Each INCREMIN Tablet
or each cc. of INCREMIN Drops contains:

l-Lysine	300 mg.	Pyridoxine (B ₆)	5 mg.
Vitamin B ₁₂	25 mcgm.	(INCREMIN Drops contain 1% alcohol)	
Thiamine (B ₁)	10 mg.		

Reg. U. S. Pat. Off.

Dosage only 1 INCREMIN TABLET or 10-20 INCREMIN Drops daily.



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THE LAW OF AVERAGES

Every man and woman is a "statistic."

Each makes a personal contribution to the Law of Averages. In a matter over which they have little or no control, the contribution of some is plus, the contribution of others, minus. Only rarely is the contribution exactly average.

This fact is important to the professional man or woman buying life insurance or a retirement plan. Each person wishes to be sure his or her money is properly spent in purchasing "coverage" in the event of death. Each—planning his or her own economics—would like the availability of cash at a certain advanced point in life or career.

How to plan? Who knows how long he or she will live—despite the Law of Averages?

Tidelands Life has taken the guesswork out of such important planning. Illustrating Tideland's New Insured Plan for Retirement with a \$10,000.00 policy, this is what it guarantees to do for you if you participate:

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Any time after this policy is issued, Tidelands Insurance Company will pay to your beneficiary \$10,000.00 cash—and—will return to your beneficiary all the premiums you have paid to the Company.

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Tidelands Life Insurance Company, a company whose record of over seventeen million dollars in life insurance sales in eight months has placed it among the important financial institutions of the State of Louisiana, is pleased to be able to offer this unique plan to professional men and women.

This Plan is available for a limited time only. Fill-in and mail the coupon to Tidelands Life today.

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'Thorazine' relieved this patient's severe anxiety and helped her to gain insight.

**"No X-ray
sees my
cancer."**

**"...nothing
stops
my pain."**



'THORAZINE' CASE REPORT

patient: 60-year-old female. After death of relative from cancer, patient developed severe epigastric pain, was convinced pain was due to hidden malignancy which defied the X-ray. Her pain was unresponsive to antispasmodics. Her severe cancerphobia was untouched by sedatives and she refused psychotherapy.

response: Complete relief from pain was obtained after two weeks of 'Thorazine' (25 mg. q.i.d.). Dosage was gradually decreased over the next two months to a 25 mg. tablet on retiring.

Patient then stated she "knew all the time it wasn't cancer." 'Thorazine' was instrumental in providing both relief and insight when "many drugs and attempts at reassurance had failed."

This case report is from the files of the patient's physician; photo professionally posed.

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Smith, Kline & French Laboratories, Philadelphia

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among nonhormonal antiarthritics...

unexcelled in
therapeutic potency

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(phenylbutazone GEIGY)

In the nonhormonal treatment of arthritis and allied disorders, no agent surpasses BUTAZOLIDIN in potency of action.

Its well-established advantages include remarkably prompt action, broad scope of usefulness, and no tendency to development of drug tolerance. Being nonhormonal, BUTAZOLIDIN causes no upset of normal endocrine balance.

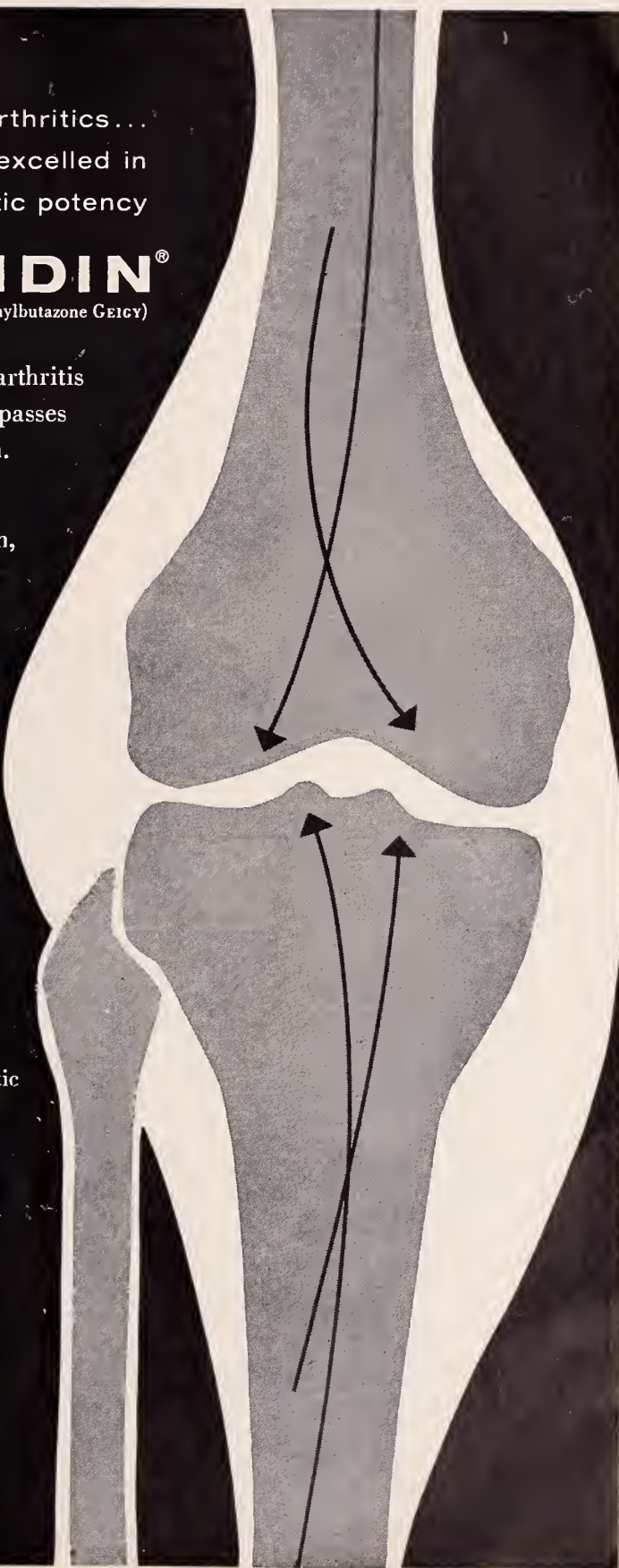
BUTAZOLIDIN relieves pain,
improves function,
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BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for detailed literature before instituting therapy.

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PHENAPHEN[®] PLUS

HEAD COLD

each coated tablet:

Phenacetin (3 gr.)	194.0 mg.
Acetylsalicylic Acid (2½ gr.)	162.0 mg.
Phenobarbital (¼ gr.)	16.2 mg.
Hyoscyamine Sulfate	0.031 mg.
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...IN URINARY COMPLAINTS

- * Sterilizes urine in 1 to 3 days
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Phenylazo-diamino-pyridine HCl—acts solely on the urogenital mucosa; provides prompt relief from burning, pain and frequency.

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Sulfacetamide—eliminates mixed infections rapidly because of its unusual solubility in acid urine common to bacterial invasion of the urinary tract. No renal damage, concretions or anuria.

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—the dual activity of SULFID with the well-known antispasmodic effect of natural belladonna alkaloids.

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Rheumatoid Arthritis
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for the pain of the present
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the original
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AS IN OTHER COLLAGEN DISEASES, BRONCHIAL
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ATARAXOID Tablet contains 5 mg. prednisolone
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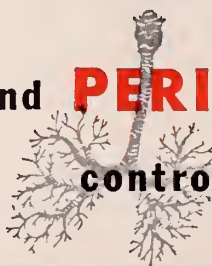
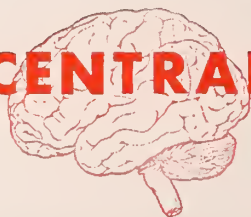
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Each teaspoonful (4cc.) contains:

Neo-Synephrine® hydrochloride	5.0 mg.
Thenfadiol® hydrochloride	4.0 mg.
Dihydrocodeinone bitartrate	1.33 mg.
Potassium gualacol sulfonate	70.0 mg.
Ammonium chloride	70.0 mg.
Menthol	1.0 mg.
Chloroform	0.02 cc.
Alcohol	8%

Bottles of 16 fl. oz.

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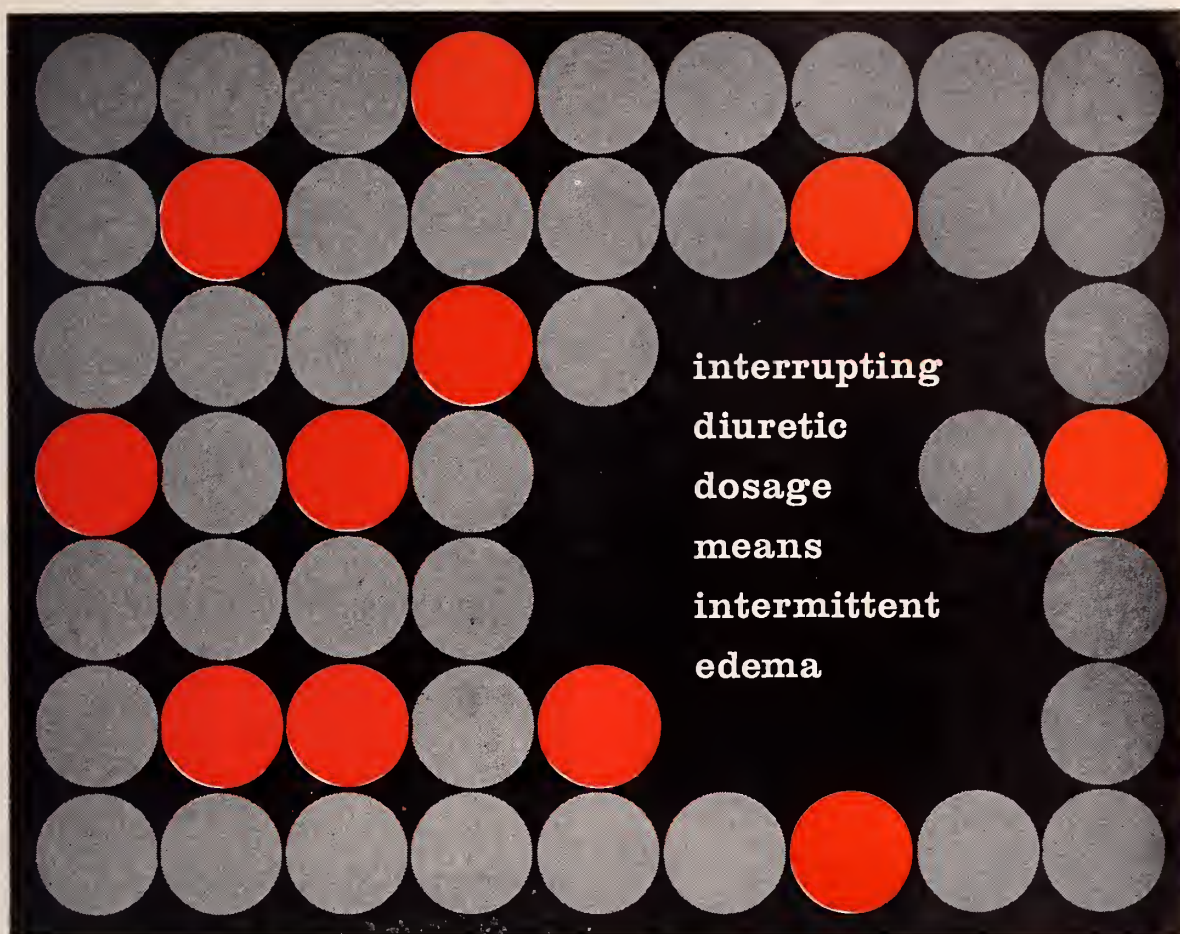
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The organomercurials never require interruption of dosage to prevent refractoriness and can maintain patients continuously in the edema-free state.

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BRAND OF CHLORMERODRIN (18.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA
EQUIVALENT TO 10 MG. OF NON-IONIC MERCURY IN EACH TABLET)

a standard for initial control of severe failure

 **LAKESIDE**

MERCUHYDRIN® SODIUM
BRAND OF MERALLURIDE INJECTION

EVERY WOMAN
WHO SUFFERS
IN THE
MENOPAUSE
DESERVES
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*widely used
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**PHENAPHEN[®]
PLUS**



MISERABLE COLD

each coated tablet:

Phenacetin (3 gr.)	194.0 mg.
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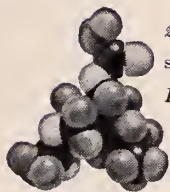
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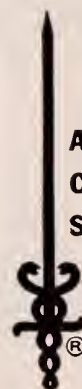
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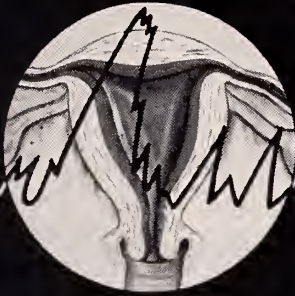
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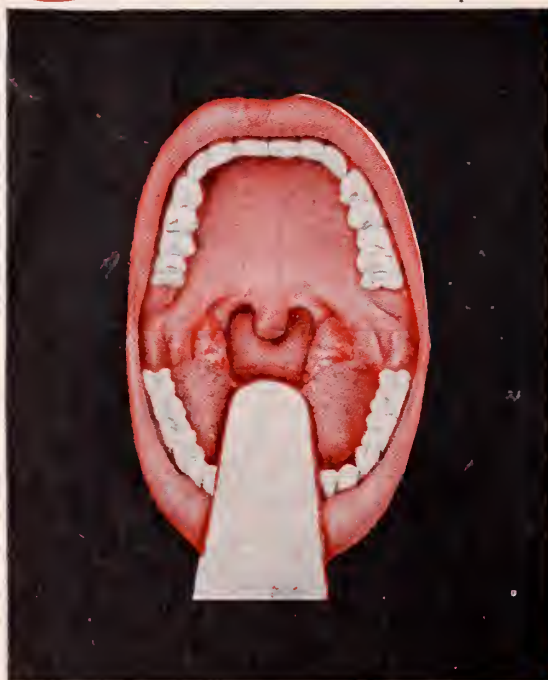
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1. Carter, C. H., and Maley, M. C.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 51.

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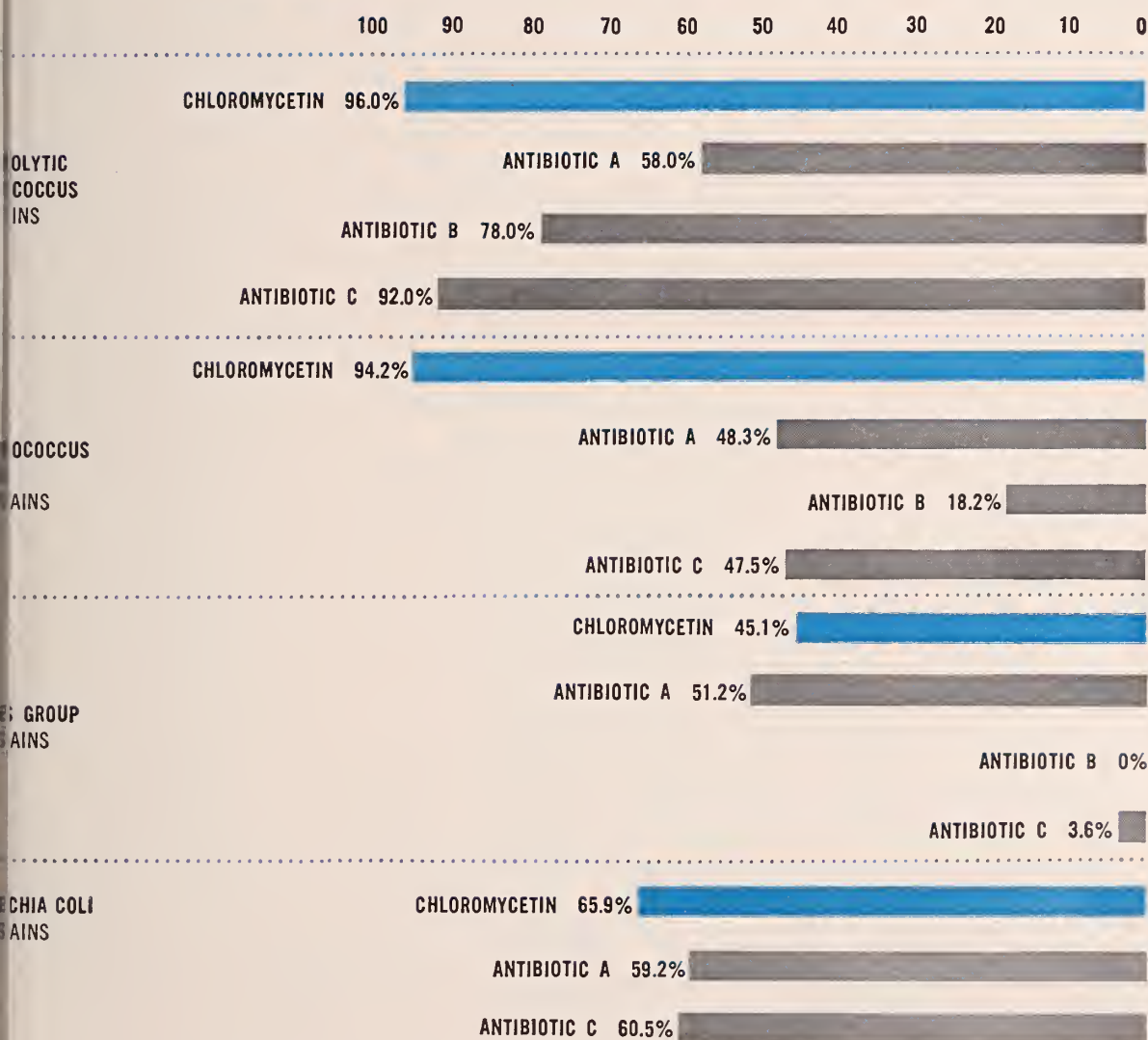
- (1) Finland, M.: *J.A.M.A.* 158:188, 1955. (2) Kirby, W. M. M.; Hudson, D. G., & Noyes, W. D.: *Arch. Int. Med.* 98:1, 1956. (3) Wise, R. I.; Cranny, C., & Spink, W. W.: *Am. J. Med.* 20:176, 1956. (4) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956. (5) Kempe, C. H.: *California Med.* 84:242, 1956. (6) Spink, W. W.: *Ann. New York Acad. Sc.* 65:175, 1956. (7) Felix, N. S.: *Pediat. Clin. North America* 3:317, 1956. (8) Altmeier, W. A.; Culbertson, W. R.; Sherman, R.; Cole, W.; Elstun, W., & Fultz, C. T.: *J.A.M.A.* 157:305, 1955. (9) Weil, A. J., & Stempel, B.: *Antibiotic Med.* 1:319, 1955. (10) Jones, C. P.; Carter, B.; Thomas, W. L., & Creadick, R. N.: *Obst. & Gynec.* 5:365, 1955. (11) Perry, R. E., Jr.: *North Carolina M. J.* 16:567, 1955. (12) Horton, B. F., & Knight, V.: *J. Tennessee M. A.* 48:367, 1955.

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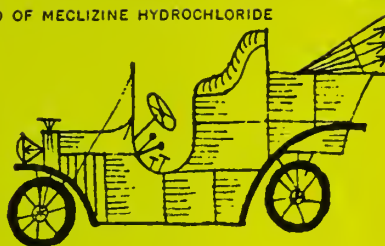
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1. Herrell, W. E., Erythromycin, Antibiotics Monographs, No. 1, p. 34, New York, Medical Encyclopedia Inc., 1955. 2. Eastman, G., Cook, E. and Bunn, P., N. Y. State J. Med., 56:241, 1956. 3. Solomon, S. and Johnston, B., Amer. J. Med. Sc., 230:660, 1955.

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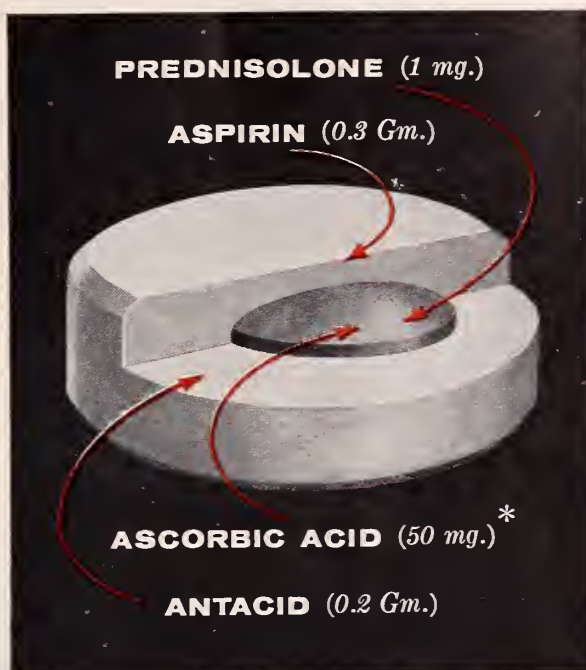
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THE ADRENAL STEROIDS AND ACTH IN SURGERY

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NEW ORLEANS

The adrenal steroids and ACTH have proved to be of infinite value in surgery, as well as in other fields of medicine. In selected cases it is now possible to prepare a patient for needed surgery, who would otherwise be considered too poor a risk to operate upon.

The adrenocorticotrophic hormone, a secretion of the adenopituitary, stimulates the adrenal cortex to produce hormones, and from studies on adrenal venous blood in the human these are mainly: hydrocortisone, corticosterone, aldosterone, and an androgenic 17 ketosteroid, androstenedione. Hydrocortisone is present in the greatest amount.¹ The effects of ACTH in the human are, for all practical purposes, similar to cortisone and hydrocortisone.

The adrenal steroids now in current use include hydrocortisone as an oral, intramuscular, and intravenous drug, and hydrocortisone acetate which is quite insoluble intramuscularly, and is used for intra-articular injection.

CLINICAL AND METABOLIC EFFECTS

Hydrocortisone has about twice the metabolic effect of cortisone.

Cortisone as an acetate is available as an oral, as well as an intramuscular drug.

The oral preparations of cortisone and hydrocortisone have an immediate clinical and metabolic effect, and the duration of

action is about six to eight hours. Contrariwise, the full clinical and metabolic effect of these drugs given intramuscularly is delayed for several days and persists for four or five days. For this reason, the intramuscular route has an advantage in certain postoperative situations.

Prednisone and prednisolone, new derivatives of cortisone and hydrocortisone, are useful in certain disease states because of the reduced sodium retaining effect and the unaltered anti-inflammatory property.

Hydrocortisone and cortisone, since they more closely resemble the total adrenal cortical secretion, are the drugs of choice in adrenal cortical insufficiency.

Cortisone and ACTH produce: (1) Na. and Cl. retention; (2) water retention; (3) excretion of K; (4) an increase in the urinary output of N, Ca. and P (negative N balance); (5) increased gluconeogenesis from P and possible F; (6) a reduction in eosinophiles and lymphocytes; and (7) an increase in platelets, red blood cells, and neutrophiles.

ACTH and the adrenal steroids have a strong anti-inflammatory effect.

The effect on blood coagulation is poorly understood. ACTH and cortisone increase capillary resistance and it is believed that this property is responsible for the success in stopping hemorrhage in many cases. The increase in capillary resistance, together with an increase in platelets, are the important factors responsible for cessation of bleeding in

thrombocytopenic purpura.

ACTH and cortisone are thought by some to increase the coagulability of the blood. Cosgriff² reported pulmonary embolism in 3 patients, and Eisenmenger³ described portal thromboses in 3 cirrhotics treated with cortisone and ACTH.

ACTH and cortisone when given in sufficient dosage produce hyperadrenalism or Cushing's syndrome.

INDICATIONS FOR USE IN SURGICAL DISEASES

There are certain diseases which are made amenable to surgery because of preliminary use of the adrenal steroids or ACTH.⁴

Patients with chronic ulcerative colitis are frequently improved to a point where colectomy can be performed with reasonable safety.

Similarly, patients with regional ileitis may be prepared for surgery with some improvement in their general condition, though improvement has been less spectacular than it has been with chronic ulcerative colitis.

The use of the adrenal steroids and ACTH in preparing a patient for splenectomy in hypersplenic states has been particularly effective. There is often an increase in blood platelets and red blood cells and a cessation of bleeding, all of which greatly reduces the hazards of surgery.

Surgery of the adrenal glands is made possible because of the availability of the adrenal hormones. Subtotal or bilateral total adrenalectomy has been performed for hypertension, Cushing's syndrome, primary aldosteronism, adrenogenital syndrome, and pheochromocytoma. Total adrenalectomy has been done in cirrhotics with ascites and for the palliative treatment of metastatic carcinoma of the breast and prostate. These patients must be carried through the critical operative and postoperative periods, and the dosage must be later carefully regulated depending upon the amount of functioning adrenal tissue which remains.

The drug of choice during the preoperative and immediate postoperative periods is hydrocortisone (compound F). This

should be given intravenously in an infusion (100-300 mg. in twenty-four hours, dissolved in 5 per cent dextrose in distilled water) as a slow drip. The rate of flow is dependent upon the blood pressure and the condition of the patient. This is later followed by cortisone, 25 mg. every eight hours, intramuscularly, with a gradual reduction in dosage until eventually the oral drug can be used. In cases of subtotal adrenalectomy the maintenance requirement is unknown since the remaining tissue may atrophy or hypertrophy. Several weeks after surgery the need of maintenance therapy can be determined by noting the eosinophilic response to ACTH after twelve to forty-eight hours of withdrawal of all steroid therapy. Many of these patients with functioning adrenal tissues will need adrenal hormone during situations producing stress. Of course, the patient who has had total adrenalectomy will require adrenal hormone the remainder of his life.

Many patients, anorexic and emaciated by previous disease, are given cortisone for its appetite stimulating and euphoristic effect. However, it is usually desirable to also include testosterone for its N retaining property.

The adrenal steroids have been used to treat thyroid crisis, pancreatitis, and thrombophlebitis. Since other therapeutic measures are usually used at the same time, it is difficult to assess their true value. However, since the adrenal steroids reduce inflammation, it is anticipated that they would be effective.

Cortisone and hydrocortisone seem to be of value in the treatment of tetanus according to the report of Lewis. ACTH and cortisone are effective in tenosynovitis, bursitis, and subacute thyroiditis, and have been of value in preventing intraperitoneal adhesions. These drugs do not seem to interfere with wound healing in moderate dosage.

Surgical cases may go into shock from adrenal insufficiency when the adrenal glands are invaded by tumor. Such a condition when suspected should be treated with hydrocortisone intravenously, then

later with the intramuscular and oral drugs.

CONTRAINDICATIONS

Contraindications to the use of ACTH and cortisone are definite and should be looked for:

1. Tuberculosis can be activated and made to progress by the use of these drugs. In cases in which tuberculosis is known to be present and the need for cortisone is urgent, streptomycin and PAS are recommended and should be given simultaneously.

2. Peptic ulcer, active or recently healed, is considered a contraindication.

3. Psychoses are a contraindication. It is believed that those patients who become psychotic while receiving ACTH or cortisone are individuals who have had a preexisting psychosis.

4. Infection is a contraindication unless combatted with an appropriate antibiotic.

5. Cushing's syndrome, malignant hypertension, uremia, congestive heart failure, diabetes, and coronary heart disease are generally considered contraindications to the use of ACTH and cortisone, though they may be used in selected cases.

Patients who have had adrenal steroids in the preceding three to six months, or who have had adrenal steroids for five days before surgery, should have additional hormone at the time of surgery because of the danger of developing adrenal insufficiency in the early postoperative period. Salassa, Bennett, Keating, and Sprague⁵ reported 2 cases in which acute postoperative adrenal insufficiency was regarded as the cause of death. A similar case was reported by Lewis et al.⁶ Fraser⁷ also reported a death from adrenal insufficiency following an orthopedic operation. All of these patients were given cortisone.

Both ACTH and cortisone produce Crooke's changes in the basophiles of the anterior pituitary (i.e., hyalinization and vacuolization). These changes are found in patients with cortical adrenal tumors. Patients treated with cortisone almost invariably develop adrenal atrophy. In patients treated with ACTH the adrenal

cortex may be increased in size or not changed. Many believe, including Lewis et al.,⁶ that ACTH should be used to stimulate the adrenal after cortisone has been stopped. Salassa and his group contend that while adrenal hyperplasia will occur and may last for some time after ACTH has been discontinued, there is reason to doubt that increased functional activity of the adrenal cortex will continue. Because of the pituitary changes that ACTH is capable of producing, they believe that endogenous secretion is depressed by exogenous corticotropin and that adrenal insufficiency is likely to occur.

SUMMARY

In summary, ACTH and the adrenal steroids have done much to make surgery possible in selected cases. However, these drugs are probably the most potent used in clinical medicine and require detailed knowledge of their action, if the patient is to be spared undesirable consequences.

REFERENCES

1. Cecil, R. L. and Loeb, R. F.: *Medicine*, 9th Ed. Philadelphia, W. B. Saunders Co., 1955.
2. Cosgriff, S. W., Diefenbach, A. F., and Vogt, W.: Hypercoagulability of the blood associated with ACTH and cortisone therapy. *Am. J. Med.* 9:752, 1950.
3. Eisenmenger, W. J., Slater, R. J., and Bongiovanni, A. M.: Hypercoagulability of the blood of patients with hepatic cirrhosis following administration of ACTH. *Am. J. Med.* 13:27, 1952.
4. Abbott, Wm. E., Kreiger, Harvey, and Levey, Stanley: The role of ACTH, cortisone and hydrocortisone in surgery. *Ann. Int. Med.* 43:702, (July) 1955.
5. Salassa, R. M., Bennett, W. A., Keating, F. R., Jr., and Sprague, R. G. J.A.M.A., 152:1509, (August 15) 1953.
6. Lewis, Leon, Robinson, Robert I., Yee, James, Hocker, Lucy A., and Eisen, George: Fatal adrenal cortical insufficiency precipitated by surgery during prolonged continuous cortisone treatment. *Ann. Int. Med.* 39:116, (July) 1953.
7. Fraser, C. G., Preuss, F. S., and Bigford, W. D.: Adrenal atrophy and irreversible shock associated with cortisone therapy. *J.A.M.A.* 149:1542, (August) 1952.

CONGENITAL DIAPHRAGMATIC HERNIA OF THE POSTEROLATERAL TYPE *

WITH REPORTS OF TWO CASES, ONE OF
WHICH WAS ELEVEN HOURS OLD AT
THE TIME OF SURGERY

R. GORDON HOLCOMBE, JR., M. D.
LAKE CHARLES

INTRODUCTION

Congenital diaphragmatic hernia, while not common, occurs more frequently than

* Presented at the Seventy-sixth Annual Meeting of the Louisiana State Medical Society, April 25, 1956, in Alexandria.

is generally realized. This condition is associated with such grave alterations in cardiorespiratory mechanics in the newborn that it usually proves fatal within the first few days of life if not recognized promptly and corrected surgically. Accordingly, it is the responsibility of all entrusted with the care of newborn infants to be capable of recognizing this anomaly, when present, so that immediate life saving surgery can be performed. The purpose of this presentation is to review the various clinical aspects of this condition with emphasis on the high fatality rate among cases which are diagnosed late or not at all, in contradistinction to the favorable outlook among those which are recognized early and subjected to immediate surgical correction.

INCIDENCE AND MORTALITY RATE

The true incidence of congenital defects of the diaphragm in newborns is not known. However, there are a sufficient number of individual and collective case reports in the literature to establish the fact that they are not uncommon. At the Charity Hospital in New Orleans¹ for the ten year period 1943 through 1952, there were 84,673 viable births with 20 cases of congenital diaphragmatic hernia having been recorded, or an incidence of 1 in every 4,233 viable births. These included cases recognized either before or after death. With the present day acceleration of moving postpartal cases with the infant from the hospital, it is entirely possible that there may have been other cases among these 84,673 viable births developing respiratory symptoms after returning home, with death occurring without establishment of the diagnosis and consequent exclusion from these figures. This factor, it would seem, must be considered in the appraisal of statistics from all institutions, whether they be private or charity. At the Babies Hospital of the Columbia Presbyterian Medical Center in New York City, Donovan² reported 17 cases of congenital diaphragmatic hernia clinically recognized out of approximately 60,000 hospital admissions. Personal correspondence with Dr. Rustin McIntosh,³

Director of the Pediatric Service of this same institution reveals that of the last 1,400 autopsies representing children of all ages up to 12 years, there were 13 examples of diaphragmatic hernia. Most of them were in the newborn age group. To quote Dr. McIntosh:

"The general impression of our pathologists is that in many instances this is a fatal condition, incompatible with long survival, and for this reason a number of the patients so afflicted survive only a few hours, and, consequently, their condition is discovered only at autopsy".

In a report by Greenwald and Steiner,⁴ of 30 newborns presenting this problem, 13 died within one hour of birth, 9 within twenty-four hours, and 2 within thirty-six hours, only 6 of the 30 surviving to represent diagnostic and therapeutic problems. Arnheim's⁵ review of the literature on 210 reported cases of congenital diaphragmatic hernia revealed 75 per cent of the cases unoperated upon to be dead by the end of the first month of life. Inasmuch as the percentage of post mortem examinations on infants dying shortly after birth is frequently low in hospitals not devoted solely to pediatrics and, since this urgent condition probably often results in death before diagnosis is established, it becomes readily apparent that the incidence may be considerably higher than the current hospital records would indicate. It seems reasonable to presume that the present incidence as revealed by records in any given hospital series is in direct proportion to the number of post mortem examinations performed on newborns dying within the first few days of life.

The realization that most cases die within a few days of birth unless operated upon has effected in recent years an about face therapeutically from the former conservative approach of delaying surgery, to the current one of immediate surgical intervention in recognized cases with a consequent reduction in operative mortality from a previous 50 to 75 per cent, to a current figure of 5 to 10 per cent. Thus, with the operative mortality becoming progressively reduced by means of im-

proved surgical approach, better preoperative and postoperative care, and more skillfully administered anesthesia, further improvement in the care of this surgical emergency lies in the identification of a higher percentage of these cases as soon after birth as possible.

PATHOLOGIC ANATOMY CORRELATED WITH ABNORMAL DEVELOPMENT

The diaphragm is derived from the septum transversum anteriorly, the root of the dorsal mesentery posteriorly, the pleuroperitoneal folds, and elements of the body wall laterally and posterolaterally (Fig. 1). Initially, the septum transver-

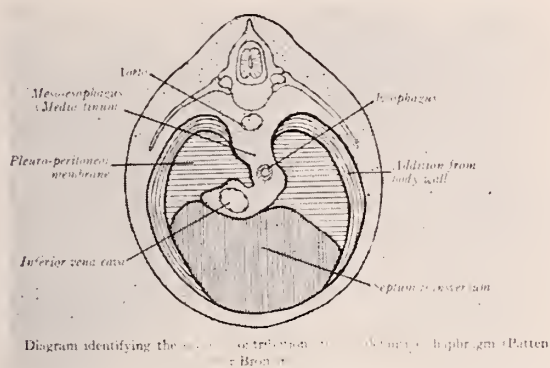


Figure 1.—Diagram identifying the several contributions to the definitive diaphragm. (From Patten: *Human Embryology*, 2d. Ed. 1953. Blakiston Division, McGraw-Hill Book Co. after Broman.

sum and fold from the root of the dorsal mesentery meet and fuse, thereby forming a bridge across the coelomic cavity to separate the abdominal viscera from the mediastinal structures and anterior portion of the pleural cavities. Inasmuch as the pleuroperitoneal folds proceed inward at a slightly later stage of development, there is a period when an opening exists between the abdominal and pleural cavities, creating the so-called pleuroperitoneal canals. The pleuroperitoneal folds then progress anteriorly and medialward to join the fused septum transversum and fold from the root of the dorsal mesentery, thereby closing these canals. These folds at this phase of development are nothing more than double layers of serous membrane with pleura on the thoracic side and peritoneum on the abdominal side of the fold. Finally, mesodermal tissue from

the body wall moves between these membranes to form the striated muscle of the completed diaphragm. Failure of completion on the part of any one of these processes by the time of birth results in a congenital defect. The locations of these defects in the order of frequency are: (1) Left posterolateral; (2) right posterolateral; (3) paraesophageal; (4) retrosternal, parasternal, or as Harrington⁶ prefers to refer to them, subcostosternal, through the foramen of Morgagni or Lerrey's spaces, which are normally devoid of muscle and traversed only by the superior epigastric artery and lymphatics. The first two of these defects, namely the right and left posterolateral herniae through the foramen of Bochdalek, represent the most common of all congenital diaphragmatic herniae constituting some 90 per cent of the cases in Gross's⁷ series of 91 cases. It is with these two groups specifically that the ensuing remarks of this paper shall be concerned, but it can be readily appreciated that the two rarer groups will present similar though less dramatic clinical findings, and require essentially the same surgical approach.

POSTEROLATERAL DIAPHRAGMATIC HERNIAE

Left sided herniae are five times as frequent as the right sided ones. That they are likewise the most dangerous is attested by Thomason's⁸ statement: "The infrequent findings in adults of the commonest childhood hernia of the diaphragm is because over 75 per cent of children suffering from it die before they are a year old". The infrequency of survival to adulthood is emphasized by Robert T. Campbell,⁹ of St. Mary's Hospital in London, who reported the case of a 79 year old male presenting this condition. He was able to collect only 8 other cases from the world literature dating back to 1910.

The size of the defect, which ranges from a rare complete absence of the posterolateral portion of the diaphragm to the more common less extensive opening referred to as the foramen of Bochdalek depends on the stage at which failure of development has occurred in the

pleuroperitoneal fold. The defect, according to Harrington¹⁰ is usually triangular in shape with the apex toward the mid-portion of the diaphragm. While it may extend completely to the thoracic wall in the larger defects, there is usually a peripheral rim or shelf of muscular tissue covered by peritoneum below and pleura above extending along the thoracic wall. In our own small experience with two cases, the defects would be more accurately described during expiration as semilunar in shape rather than triangular, with the concavity conforming to the curve of the posterolateral wall of the abdomen and thorax, and the convexity conforming to the free edge of unattached diaphragm. During inspiration with contraction of the free edge of the diaphragm the defect appeared elliptical.

According to Gross,⁷ in 90 per cent of these openings there is no serous membrane covering, and consequently no hernial sac, the pleura and peritoneum being continuous over the edge of the muscular defect. In the other 10 per cent the pleuroperitoneal membrane has fused with the other elements of the diaphragm, but there has been a failure of the muscular elements to develop from the thoracic wall between the leaves of the pleuroperitoneal fold. Cases with such sacs will rarely exhibit herniation of the abdominal viscera more than three-quarters of the way to the apex of the pleural cavity, while it is quite common in the more usual type hernia in this location without a sac to permit viscera to completely fill the thoracic cavity of the affected side.

The displaced abdominal viscera which have been noted in reported cases include every organ in the abdomen, the structures of the pelvic cavity being the only ones never recorded within the chest in one case or another. The organs most usually noted include the stomach, spleen, small bowel, a portion of the colon and liver with the side of involvement determining to a significant extent the frequency with which all or a portion of these structures are noted.

CLINICAL FINDINGS

The dramatic symptoms and signs which characterize the posterolateral congenital diaphragmatic herniae spring from compression of the lung on the affected side and displacement of the mediastinal structures, including the heart and great vessels, by the large volume of abdominal viscera occupying the right or left pleural cavity. Cyanosis and dyspnea are cardinal symptoms of the severe alterations in cardiorespiratory physiology. Although vomiting may occur early, this is usually noted only in cases which have survived the severe intrathoracic disturbances for a sufficient period to develop partial or complete intestinal obstruction. The incidence of obstruction in congenital diaphragmatic herniae, according to Hedblom¹¹ in his analysis of 37 cases was 29 per cent. How often obstruction occurred specifically in defects of the posterolateral type was not stated. Needless to say, the mortality rate in those with obstruction is much higher than in those without obstruction.^{11, 12} It has been pointed out by Carter and Giuseffi¹³ that obstruction in this type of congenital hernia is rare when compared with the high incidence of this complication among traumatic diaphragmatic herniae of adults. It is the feeling of these authors that the relatively large opening in the congenital defects permits easy ingress and egress of abdominal structures without complete compression of the elements of the intestinal tract. In addition to this factor, the rarity of adhesions between the abdominal structures in the chest and the pleura associated with congenital defects of the diaphragm in contrast with traumatic defects associated with hemothorax is undoubtedly of importance in explaining this relative infrequency of intestinal obstruction among the congenital herniae. Anorexia and a failure to gain weight are common symptoms reported in cases which have survived long enough for these observations to be made.

Physical examination usually reveals an acutely ill, cyanotic child with a rapid pulse and quick labored respiration. The

temperature may be significantly elevated when secondary pneumonitis is present. There is prominent movement of but one side of the chest. The abdomen is flat, or even sunken, in appearance. Palpation of the chest reveals displacement of the heart and trachea to the unaffected side. Percussion of the affected side of the chest may elicit a dull or tympanitic note depending on the viscera which have been displaced into the thorax. Auscultation reveals diminished or absent breath sounds, and may reveal the presence of intestinal sounds in the axilla or apex of the pleural cavity on the affected side. As pointed out by Sanford:¹⁴ "Dextrocardia and a weak cry in a newborn infant should always be regarded with suspicion". Such findings on x-ray are diagnostic, and this means of establishing a diagnosis should be employed promptly in every newborn infant presenting *any type* of respiratory distress. It is stated by some that the atelectasis present in the newborn infant lung which is not totally expanded before forty-eight hours after birth may make radiologic diagnosis difficult. While this may be true in some cases, it must be rare. One must realize that the lung is collapsed to various degrees in most cases presenting congenital diaphragmatic hernia regardless of age, and that the diagnosis is established by the presence of shadows of intestinal viscera which are recognizable on x-ray within the first few hours of life being present in the chest, and not on a basis of pulmonary collapse. In support of this feeling, our second case was noted to have respiratory distress shortly after birth, and was examined radiologically promptly by the physician in charge (Fig. 2). The diagnosis was immediately established and successful surgery completed within twelve hours of delivery. *The importance of a total abdomen and chest x-ray of every infant presenting evidence of respiratory distress within the first few days of birth cannot be over-emphasized.* In cases where findings are questionable and the use of opaque media is desirable to unequivocally establish the presence or absence of por-



Figure 2.—Roentgenogram of Case No. 2, approximately nine hours after birth.

tions of the intestinal tract within the chest, it is recommended that lipiodol be employed as a safe and satisfactory media; barium should be avoided because of the danger of vomiting with aspiration of this material into the tracheobronchial tree and lung. The differential diagnosis of translucent shadows on x-rays in dyspneic infants must include, aside from congenital diaphragmatic hernia, congenital lung cysts, pneumatocoeles secondary to staphylococcic pneumonia, tension pneumothorax, and congenital lobar emphysema.

TREATMENT

Once the diagnosis is established there is nothing to gain and much to lose by any significant postponement of surgical intervention. When surgery can be carried out during the first forty-eight hours after birth, the surgeon has the advantage of a nondistended intestinal tract, facilitating not only its removal from the thorax, but its replacement into the abdominal

cavity. In cases which are older, decompression of the stomach and upper intestinal tract by gastric siphonage, hydration, antibiotic therapy and oxygen may be valuable preoperative measures. Such procedures can be instituted for a brief period of time prior to surgery and continued during surgery but *must not be employed with any idea of producing marked improvement in an acutely and gravely ill child before surgical correction of the defect is carried out.* The altered cardiorespiratory mechanics, with the resultant anoxia so poorly tolerated by the newborn, may be lessened but is not eradicated by any measure other than surgical removal of the abdominal structures from the chest. Accordingly, preparation of the patient should be expedited and the operative procedure carried out without delay. The anesthetic of choice is cyclopropane administered through a closed system with a tightly fitted mask or endotracheal tube. This permits positive pressure anesthesia with a high concentration of oxygen.

The incisions employed most commonly include the vertical paramedian, subcostal, and transverse upper abdominal. The transthoracic approach so helpful in adults presenting acquired diaphragmatic herniae is undesirable in infants because of the possible coexistence of associated intra-abdominal anomalies which may be missed by such an approach, as well as because of the difficulty encountered in reducing the abdominal structures through the defect from the thoracic side into an undeveloped abdominal cavity.^{7, 15} A transverse upper abdominal incision has been employed in the two cases upon whom we have operated because it was felt that this would make a pouch of the lower abdomen to receive the abdominal structures after repair of the diaphragmatic defect and afford a wound which would be less likely to disrupt as a result of crying and straining on the part of the infant, or as a result of intestinal distention which occurs commonly for the first several days following surgery. The author gives the transverse incision considerable credit for the ease of surgical approach and clo-

sure, as well as the smooth postoperative course in his two cases. In rare instances, particularly on the right side, a combined abdominothoracic approach may be useful.

After the abdominal cavity has been opened, attention should be directed immediately to the reduction of the displaced viscera from the thoracic cavity. Any inspection or exploration for possible associated anomalies should be reserved for a later stage of the procedure, removal of the abdominal structures from the chest with the repair of the diaphragmatic defect and reexpansion of the collapsed lung being the primary interest of the surgeon during this phase of the operation. The defect is noted, and a Robinson catheter introduced through it into the pleural cavity to allow air to pass freely into the chest cavity as the abdominal structures are withdrawn. The negative pressure in the chest may be such as to make removal of the viscera very difficult without the use of a catheter in this manner. In contradistinction the suction of the cavity can be nullified and the viscera removed much more easily and with less trauma when a catheter is inserted into the pleural cavity so as to allow the ingress of air as the contents are delivered into the abdominal cavity. As the small bowel and colon are carefully drawn from the chest, they are carried through the abdominal wound and placed on the anterior abdominal wall where they are protected by moist gauze pads. When all structures have been removed, the opening in the diaphragm is surveyed and repaired. As pointed out previously, the defect is usually correctible by suture approximation of its edges. In our first case, the posterior fold was very small, but was visible during phases of diaphragmatic contraction. Accordingly, the operator should have good illumination and examine the posterior thoracic abdominal wall carefully during the various phases of inspiration and expiration so as to see the presence or absence of this posterior fold. In our second case, the fold could not be visualized during respiratory movements. In both cases, the anterior fold was

free and actually deflected upward into the chest along the medial and anterior aspect of the displaced abdominal structures. Thus, when these viscera had been removed, this fold fell into position like a curtain to convert a sizable defect into one not nearly so formidable. This was our experience in two cases. The edges of the foramen are incised for the entire circumference of the defect to separate pleura from peritoneum and to bare the muscular substance of the diaphragm. Mattress sutures of cotton are then employed to approximate the edges of the defect and finally the peritoneum drawn together with a row of interrupted cotton sutures. The catheter which has been previously employed to admit air into the pleural cavity during retraction of the abdominal structures is replaced into the chest before the last mattress suture is placed, and the pleural cavity aspirated to create a negative pressure within it before withdrawal of the tube and tying of the last suture. During this aspiration the anesthetist is asked to administer gentle positive pressure to aid in inflating the collapsed lung and expressing air from the pleural cavity. With the completion of the peritoneal sutures referred to above, the repair of the diaphragmatic defect is completed. It will usually be noted immediately that the patient's general condition is considerably improved and that the cyanotic color is greatly reduced. Crushing of the phrenic nerve before or after repair is avoided. An active diaphragm aids materially in expanding the compressed lung and correcting promptly the altered physiology which threatens the infant's life.

In regard to the correction of more massive defects, numerous techniques have been recommended which should be mentioned here. Weinberg,¹⁶ and later Arnheim,⁵ have used the renal fascia to bridge the defect between the posterior and anterior folds of the imperfectly developed diaphragm.

Donovan² approximates the existing anteromedial diaphragmatic fold to the chest wall by applying mattress sutures

and passing these completely through the posterolateral chest wall to be tied externally. Bird¹⁷ divides the ribs, and Harrington¹⁰ resects ribs extrapleurally as an aid in mobilizing the chest wall toward the existing anteromedial rim of diaphragm in large defects to permit suture. Belsey and Apley¹⁸ have freed the existing rim of diaphragmatic tissue from the thoracic wall attachments, leaving only the mediastinal attachments intact for nerve and blood supply. The defect is then repaired and the periphery of the diaphragm which has been detached is then reattached to the thoracic wall two interspaces higher than the previous normal level of attachment. In cases presenting sacs, the sac has been plicated and used as material for repair of the defect.^{5, 19-22} Geever and Merendino²³ have reported successful use of the cutis grafts in experimental animals in the repair of artificially created massive defects of the diaphragm. Tantalum mesh has been recommended as a means of closing defects not amenable to other suture closures. It is apparent that the surgeon must be resourceful and imaginative when dealing with these defects. It may be noted that Hedbloom¹¹ included in his report two cases in which the defects defied repair because each involved total absence. One of these children lived to die at one year of age, the other at eight years of age.

After the defect in the diaphragm has been dealt with, a silver clip may be placed in the center of the suture line for future radiologic reference.²⁴ Structures are then surveyed for associated anomalies and replaced into the peritoneal cavity if no further abdominal surgery is required. This replacement may be attended by difficulty in the newborn or young infant because of the small capacity of the peritoneal cavity and is particularly a problem when the intestinal tract is distended. If replacement can be effected, layer suture of the abdominal wall is carried out. It may be noted that Dorsey²⁵ has reported the use of manual stretching of the abdominal wall in a four year old child in order to replace the viscera into

the peritoneal cavity. Although this procedure does not sound appealing to the author, there are instances in surgery when compromises in delicate technique have to be made and at least in Dorsey's case, the procedure was considered by him to be of value. Donovan,² and Ladd and Gross⁷ have recommended undercutting the skin and subcutaneous fat in instances in which closure cannot be effected otherwise and closing simply the skin over the protruding abdominal viscera. A week or so later, when the patient's general condition is improved and distention is not present, the abdominal hernia is repaired. In the author's two cases, despite the small size of the abdominal cavity in each instance, and the variation in ages (one case 3½ months, and the other 11 hours old), it was not considered difficult to return the structures to the abdominal cavity with the use of the transverse incision. It was felt, as stated previously, that this incision in the left upper abdomen created a pouch of the lower abdomen into which the viscera could be placed and was responsible for lessening the difficulty which might have been greater had a vertical incision been employed.

After the wound has been closed and dressed, employing elastoplast instead of conventional adhesives so as to allow for abdominal distention without producing upward pressure on the repaired diaphragm, the patient is placed in a head down position and allowed to react. A suction is kept on hand for clearing the tracheobronchial tree of secretions or of material which may be aspirated if vomiting occurs.

Oxygen is administered continually from the immediate postoperative period through the first several days following surgery. As pointed out by Harrington,¹⁰ an x-ray should be made before the patient leaves the operating room. Such a film can be of invaluable assistance in interpretation of films made a few days postoperatively. Kuchlan²⁴ has recorded a case of traumatic hernia in which such a procedure might have averted unnecessary reexploration. An early postopera-

tive complication had occurred, and the films were misinterpreted, revealing what was thought to be a recurrence of the hernia. The same problem could occur, of course, in congenital diaphragmatic hernia. During the postoperative period, in addition to the administration of oxygen, careful attention must be given to combating distention, which can be considerable. The pediatrician working in conjunction with the surgeon aids materially in the administration of fluids and blood, and in the regulation of the formula or diet as these are tolerated and indicated.

CASE REPORTS

The report of the following two cases exemplifies the problems referred to in the presentation.

Case No. 1—C. H. — Was an apparently normal 6 pound, 12 ounce female child at birth. There was no neonatal distress, and her progress seemed normal during the first three weeks of life. From 3 weeks of age until 3½ months of age she had a persistent cough, slight respiratory distress, noisy breathing, and fairly frequent episodes of "colic". She did gain adequately, and was given the usual milk and solid foods for her age. She was under treatment for "bronchitis" off and on from 1 month to 3½ months of age. Several antibiotics, plus cough syrups and vapor tents were prescribed by the family physician. These treatments were on the basis of home or office visits. No x-rays were taken. Her respiratory situation became gradually more severe, with a particularly bad spell when she was 3½ months of age. At this time she was first seen in consultation by a pediatrician. Her breathing was very noisy, she could be heard across the room. She was sitting up, experiencing considerable respiratory distress, coughing sporadically, and her temperature was elevated. Physical examination showed primarily a fairly clear right chest with some bubbly rhonchi. The left chest gave evidence of less air entering, the bubbling was more marked, and there were bursts of tinkling sounds unrelated to respiration. The child was subjected to quick fluoroscopic examination which showed considerable foreign shadow in the left chest, the shadow displaying peristaltic movement. Opaque media was given by mouth, and when the bolus arrived in the left chest the child was sent to St. Patrick's Hospital. The author was called to see this child in consultation at this time. After a brief period of observation, surgery was performed, and a posterolateral defect in the diaphragm was found and repaired after careful removal of the abdominal viscera from the left hemithorax. There were no other anom-

alies. The patient's postoperative course was uncomplicated, and she was discharged on the eighth postoperative day. She has remained well ever since, and Fig. 3 shows this child at 1½

and a left posterolateral defect in the diaphragm repaired after removal of the abdominal viscera from the left chest. The postoperative course



Figure 3.—Case No. 1 at age 1½ years.

years of age. She is now 5 years old, and is a perfectly normal child in every respect. Her x-rays at 5 years of age are seen in Figs. 4 and 5, before and after the ingestion of barium, respectively.

Case No. 2—D. D. — A newborn infant boy, the son of an airman, was seen by the author at the Lake Charles Air Force Base Hospital at the request of the Medical Officer in charge of this case, approximately ten hours after delivery. Because of respiratory distress, cyanosis and regurgitation, x-rays of the chest had been made and intestinal shadows noted to fill the left hemithorax (Fig. 2). The author was consulted at this time. A catheter was passed into the stomach and lipiodol introduced under a fluoroscope, revealing the stomach and bowel in the left chest. Surgery was performed immediately,

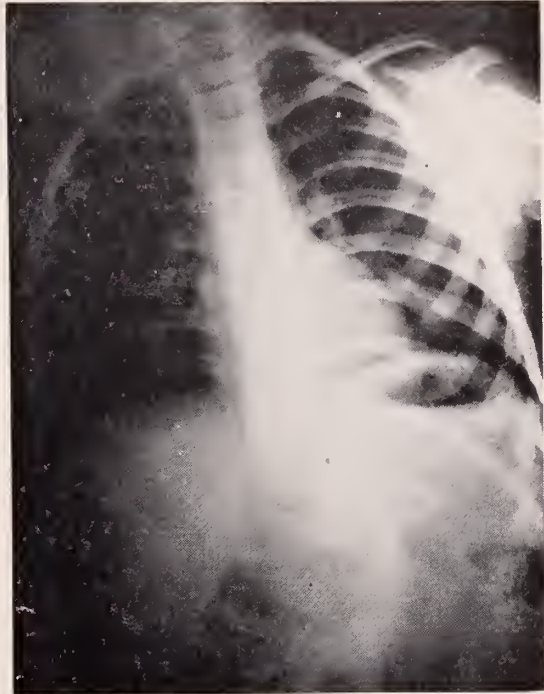


Figure 4.—AP roentgenogram of Case No. 1 at age 5 years before ingestion of barium.



Figure 5.—Lateral roentgenogram of Case No. 1 at age 5 years after ingestion of barium.

was uncomplicated, and the baby was discharged from the hospital on the twelfth postoperative day. When last seen at age of 2 months he was found to be in excellent condition, weighing 16½ pounds. An x-ray of this child at that time is presented in Fig. 6. Further follow-up has been

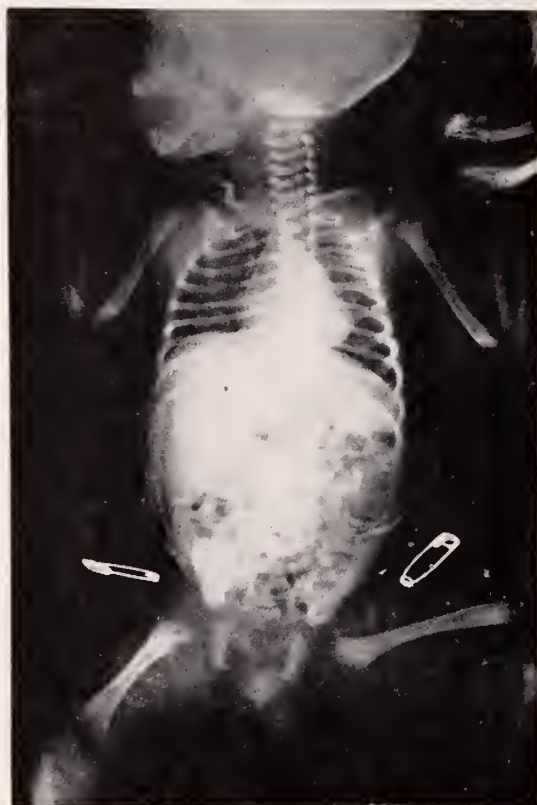


Figure 6.—Roentgenogram of Case No. 2 at two months of age.

impossible to date because of the transfer of his parents from this air base. Because of the critical condition of this infant prior to surgery, administration of oxygen was required even during transfer to the operating room. The surgery was performed when he was 11 hours old. There were no other anomalies.

SUMMARY

1. The fact that congenital diaphragmatic hernia of the posterolateral type requires immediate surgery to achieve the lowest possible mortality rate has been well established, and is simply re-emphasized in this paper.

2. Further improvement in the management of this condition depends on recognition of a larger percentage of cases prior to death.

3. The free use of x-ray of the chest and abdomen in all infants presenting any type of respiratory difficulties in the

first few days of life can be of invaluable assistance in attaining this end.

4. Two cases, one of which was 11 hours old at the time of surgery, both successfully restored to normal, are briefly presented to demonstrate the clinical aspects of the condition, and the gratifying results achieved by prompt surgical correction of these defects.

REFERENCES

1. Emmett, R. O.: 1953—Then Assistant Director of Charity Hospital in New Orleans. Personal Communication.
2. Donovan, E. J.: Congenital diaphragmatic hernia, *Ann. Surg.*, 122:569 (Oct.) 1945.
3. McIntosh, Rustin: Personal correspondence to Dr. Conway Magee, Oct. 20, 1953.
4. Greenwald, H. M. and Steiner, M.: Diaphragmatic hernia in infancy and childhood, *Am. J. Dis. Child.*, 38: 361 (Aug.) 1929.
5. Arnheim, E. E.: Congenital hernia of diaphragm with special reference to right sided hernia of liver and intestines, *Surg., Gynec. & Obst.*, 95:3, 293 (Sept.) 1952.
6. Harrington, S. W.: Diaphragmatic hernia of children, *Ann. Surg.*, 115:705 (April) 1942.
7. Gross, R. E.: *The Surgery of Infancy and Childhood*, W. B. Saunders Co., 1953.
8. Thomason, S. A.: *Essays in Surgery*, Univ. of Toronto Press, 1950.
9. Campbell, R. T.: Intestinal obstruction with congenital absence of the left diaphragm, *Brit. J. Surg.*, 41: 165, Pgs. 56-60 (July) 1953.
10. Harrington, S. W.: Various types of diaphragmatic hernia treated surgically; Report of 430 cases: *Surg., Gynec. & Obst.*, 86:735-755 (June) 1948.
11. Hedblom, C. A.: Diaphragmatic hernia; A study of three hundred and seventy-eight cases in which operation was performed, *J.A.M.A.* 85:947 (Sept. 26) 1925.
12. Hartzell, J. B.: Congenital diaphragmatic hernia in children; Resume of 68 cases in children treated by operation, *Am. J. Surg.* 48:582 (June) 1940.
13. Carter, B. N. and Giuseffi, J.: Strangulated diaphragmatic hernia, *Ann. Surg.*, 128:120 (Aug.) 1948.
14. Sanford, M. C.: Congenital Diaphragmatic Hernia, Special Report No. 250, *Clin. Proceedings of the Children's Hospital, Wash., D.C.*, 8:11, Pgs. 252-260, Nov., 1952.
15. Benson, D.: Surgical lesions of the upper abdomen in the newborn and infant, *J. Mich. State Med. Soc.*, 50: 1131 (Oct.) 1951.
16. Weinberg, J.: Diaphragmatic hernia in infants; Surgical treatment with the use of renal fascia, *Surg.*, 3:78 (Jan.) 1938.
17. Bird, C. E.: Division of ribs as an aid in closing a diaphragmatic hernia, *Ann. Surg.*, 104:993 (Dec.) 1936.
18. Belsey, R. and Apley, J.: Congenital right sided diaphragmatic hernia; some difficulties in differential diagnosis and operative repair, *Arch. Dis. Childhood*, 24: 129 (June) 1949.
19. Triesdale, P. E.: Diaphragmatic hernia, report of cases illustrating its varieties, *South. Surg.*, 8:1 (Feb.) 1939.
20. Bisgard, J. D.: Congenital eventration of diaphragm, *J. Thoracic Surg.*, 16:484 (Oct.) 1947.
21. State, D.: Surgical correction of congenital eventration of the diaphragm in infancy, *Surg.*, 25:461 (March) 1949.
22. Butch, W. L. and Leahy, L. J.: Technic of surgical treatment of congenital eventration of diaphragm in infancy, report of case, *J. Thoracic Surg.*, 20:968 (Dec.) 1950.
23. Geever, E. D. and Merendino, K. A.: Repair of diaphragmatic defects with cutis grafts, experimental study, *Surg., Gynec. & Obst.*, 95:308 (Sept.) 1952.

24. Kushlan, S. D.: Strangulated right diaphragmatic hernia with surgical cure, *Gastroenterology*, 18:466 (July) 1951.

25. Dorsey, J. M.: Principles involved in the surgical treatment of diaphragmatic hernias in children, *J. Thoracic Surg.*, 12:267 (Feb.) 1943.

RESPONSE OF TUBERCULOSIS TO INTENSIVE COMBINED FOUR DRUG THERAPY

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There is already enough evidence to indicate that even the most recent additions to our therapeutic weapons against tuberculosis available, i.e., pyrazinoic acid (pyrazinamide, aldinamide) and cycloserine (seromycin), do not constitute any remarkable progress, if any, in attempts to find a cure for tuberculosis. Furthermore, one of these new additions (pyrazinoic acid amide) is stated even by its manufacturers to be too toxic to be administered to patients other than those in whom other treatments have proved ineffective, or as a short course in connection with surgical treatment.

While it is true that significantly fewer patients die of tuberculosis nowadays, in all likelihood because of modern drug therapy, it is equally true that in spite of the same modern therapy, including surgical procedures, the number of tuberculous patients has not changed significantly, if not actually increased. Tuberculosis is still regarded, with justification, as a disease whose victim is condemned to chronic invalidism, frequently life-long, an essential part of which is usually spent by the patients as a dreary sequence of almost endless, prison-like hospitalizations. Many of these hospitalizations still mean confinements for life, with no reasonable hope of escape, all available drugs having been tried and found ineffective in such cases, except that they keep the patients alive, thus forcing some of the patients to accept the situation with resignation, while others develop a more marked reactive mental degeneration.

Even more deplorable is the fact that most physicians in charge of these "hopeless" cases have accepted the hopelessness and make their therapeutic plans in accordance with the prospect of having to deal with incurable or relapsing patients indefinitely or until they die. Such an attitude is clearly manifested also by the therapeutic recommendations of standard textbooks and other sources of authority—it is a widely accepted and advised policy to withhold one or more drugs in the treatment of tuberculosis in order to be able to administer such initially withheld drugs later during the many months and years to come when the drug or drugs initially started have failed. This means that the patient's treatment is started with considerable likelihood in mind that he will not recover.

The writer was in charge of many seemingly "incurable" tuberculous patients at Willard Hospital in New York City July 1954 to September 1955, and was unable to accept the policy of indefinite hospitalizations and the therapeutic measures planned with countless years of incurability in mind. He calculated that in order to effect cure and eradication of the tuberculosis bacilli, a combined and hardest possible blow should be tried as persistently as possible.

Combinations of three antituberculous drugs (para-aminosalicylate, isoniazid, streptomycin) have been relatively extensively tried previously and reported to have no clear-cut advantage over combinations of only two of the drugs mentioned. However, it is striking to learn that such three-drug combinations have been used with little persistency and often in inadequate dosages. Also, it is remarkable that the very same authorities who feel that three-drug combinations are no better than two-drug combinations still unhesitatingly recommend and order heavy doses of the three or more drugs in combination to be given to critically ill patients, including several grams of streptomycin daily, in spite of the allegedly proved fact that 1 gram of streptomycin twice or three times weekly is thought to be just

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as effective against tuberculosis as higher dosages. In critical conditions there appears to be considerable doubt about the "proof" otherwise accepted.

STREPTOMYCIN AND DIHYDROSTREPTOMYCIN

This together with a preexisting feeling in the writer's mind that the efficacy of a twice-weekly administration of a drug that is excreted or destroyed within a few hours could not be sensibly accepted as equal to more frequent administrations convinced the writer that streptomycin should be given at least once daily to all tuberculous patients in an attempt to eradicate the infection, since a mild case could also become resistant during inadequate treatment. More frequent administrations of streptomycin in large doses, even if desirable for the treatment of tuberculosis, knowingly involve the risk of serious toxicity, and consequently a limit has to be set. It has been well demonstrated that combinations of streptomycin and dihydrostreptomycin are considerably less toxic to the eighth nerve than either of these two drugs alone given in dosage equal to the combined amount of the two. At the same time, there is no evidence that the combination is less effective against tuberculosis because of the fact that each of the two drugs in combination is given in only half the dosage in which it would be necessary to give any of the two if given without the other. It is known that they work synergistically against the tuberculosis bacillus, and it has been thought that they are identical in their manner of antituberculous action. There have been some indications, however, that one of the two drugs may still inhibit the tuberculosis bacilli that are proved to be resistant to the other. In the light of such indications the combination of streptomycin and dihydrostreptomycin may have even a wider therapeutic importance than the generally known lesser toxicity. From previous experience it would appear that half a gram of each daily would be of reasonably low toxicity and at the same time not unreasonable as therapeutic agents against tuberculosis. During the study reported in this paper

it was experienced that such a combined dosage did not cause any clinically detectable deafness or vestibular disturbance even after several months of continuous administration.

ISONIAZID

The dosage of isoniazid was set by the author at 150 mg. three times daily for patients below 150 pounds, and 200 mg. three times daily for patients above 150 pounds. Not a single case of toxic reactions or side effects attributable to isoniazid was encountered in the 41 patients reported on here, during continuous medication ranging up to six and one half months. It is questionable how much of this absence of toxic effects can be attributed to the 0.167 mg. of pyridoxin that was given daily in the multivitamin preparation to each patient during most of the study.

PARA-AMINOSALICYLIC ACID

Para-aminosalicylate (sodium salt) was given in dosages of 4 to 5 grams three times daily, without regard to the patient's weight. The 4 gram doses were given during the first half of the study, but the dosage was then increased to 5 grams three times daily in all patients, except in those who had apparently already become inactive on the 4 gram dosage. Accordingly, some patients received only 12 grams of para-aminosalicylate daily throughout their hospital treatment (in addition to the three or two other drugs mentioned above), while others received 15 grams daily throughout their treatment, and an intermediate group received 12 grams daily first, and then 15 grams daily.

No attempt is made to evaluate the relative value of these dosages, but in several cases there was a clinical impression that the increase of the dosage from 12 to 15 grams daily caused a more marked turning point in the improvement, in that the fever, symptoms, and sputum decreased or disappeared remarkably within a few days. Another observance worthy of note was that no insuperable difficulties in the administration of para-aminosalicylate in tablet form were encountered in

any of the 41 patients, despite the fact that several of the patients had been regarded as totally incapable of taking para-aminosalicylate because of gastrointestinal intolerance observed in connection with the several attempts to administer the drug during the patients' preceding stay at the hospital for months or years. When these patients were firmly told that they had to take the drug and keep it down in the face of the very serious character of their disease a few initial vomitings were all that disturbed the schedule.

METHOD OF TREATMENT

In the study reported here all four drugs (streptomycin, dihydrostreptomycin, isoniazid and sodium para-aminosalicylate) were started simultaneously in the dosage given above, as soon as the diagnosis of active tuberculosis (pulmonary in all patients) was ascertained in practically all cases by finding typical acid-fast bacilli in sputum or gastric contents, and by seeing the x-ray films of the lungs. In only one case was the diagnosis made without finding acid-fast bacilli. This occurred in a young female with a typical pleural effusion and clinical course, the cytology and chemistry of the pleural fluid also supporting the diagnosis of tuberculosis.

The study, that was started in January 1955 at Willard Parker Hospital, was intended to embrace hundreds of patients, with a follow-up period of up to two years or perhaps more. Unfortunately, the current policy of the New York City hospital authorities to close the city's tuberculosis and contagious disease hospitals unexpectedly hit Willard Parker Hospital in September 1955, first of all putting an end to the chest service there and thus also putting a sudden end to the investigation that had been encouraging.

Therefore, only 41 patients could be given the combination treatment with the four drugs mentioned over a reasonable period of time to enable any evaluation of the efficacy of the combination to be made. In spite of this relative inadequacy in the number of patients and in the length of observation it is felt by the

author that this report should be of value in encouraging other physicians who have the necessary patient material to carry on further investigations along similar lines—trying to effect cure of tuberculosis by intensive and persistent treatment from the very beginning, particularly since such inciting reports are deplorably few in the literature on such a tragic disease as tuberculosis.

A study concerning the efficacy of four antituberculous drugs combined should be of interest also historically since it seems to be difficult, if not impossible, to find reports in the literature describing employment of four antituberculous drugs simultaneously.

The full-dosage combination of the four drugs was given to each patient for an initial period of at least one month. When there was clearcut evidence of clinical disappearance of symptoms, x-ray improvement and, in most instances, disappearance of the acid-fast bacilli from patient's sputum smear or from the gastric contents (which were obtained monthly on three consecutive days if the amount of sputum was unsatisfactory for examination) dihydrostreptomycin was discontinued and streptomycin decreased to 1 gram three times weekly. The dosages of isoniazid and para-aminosalicylate being unchanged, this three-drug therapy was then continued to a total of up to six and one-half months, counted from the beginning of the four-drug treatment. In no case was the simultaneous four-drug treatment with daily injections of streptomycin and dihydrostreptomycin given longer than four months, for a prolongation of such treatment would have meant a self-defeat of the purpose of the study, i.e., a more rapid cure or significant improvement of the tuberculous patient than had been possible with other forms of treatment. If and when it happened that the patient failed to show definite improvement after these initial four months (in two cases even before the four months were over) pyrazinoic acid amide in combination with isoniazid and para-aminosalicylate or tetracycline was started. Actually, there

never was any complete lack of improvement, as manifested clinically on x-ray films and the decrease of sputum and less easy finding of acid-fast bacilli, during simultaneous administration of the four drugs for a maximum period of four months. This was true even in the patients who had previously failed to show any improvement for months or years or who had actually become worse during a less intensive treatment or with treatment with two or three of the drugs in various combinations. However, a moderate or slight improvement was not considered satisfactory since it did not lead to the patients' escape to more normal living conditions.

No selection was made among the patients available before they were started on the four simultaneous drugs. The only requirement was that they should have active tuberculosis. Thus, a few of the patients were very mild cases; whereas others were critically ill, with extensive bilateral involvement of the lungs.

RESULTS

Sixteen patients had never received drug treatment for their tuberculosis longer than for two weeks prior to the onset of the four-drug treatment. All of these patients, with one exception, lost the symptoms of their tuberculosis within at most two and one-half months of the four-drug treatment, and acid-fast bacilli could no longer be found in their sputum (if produced in an exceptional case) or gastric contents, and they rapidly returned to their normal body weights or exceeded it, and felt subjectively perfectly healthy.

The one exception was a 28-year-old Negro female with severe sickle cell anemia, in prolonged sickle cell crisis with icterus for several weeks during the treatment, who often vomited her meals and together with these probably much of her medications. Her improvement was very slow during the three and one-half months of the four-drug treatment, and her sputum continued to contain acid-fast bacilli until she was transferred to another hospital after the three and one-half months, in connection with closing of Willard Par-

ker Hospital chest service. Her sickle cell activity never disappeared, and she still had a slight jaundice at the time of transfer to the other hospital. Her erythrocyte sedimentation rate was normal or less than average, in spite of her very extensive bilateral, active tuberculosis, with copious sputum loaded with tuberculosis bacilli.

In 15 other cases, cavities, if present in the beginning of the four-drug treatment, disappeared (as judged on tomograms) during the treatment, and all that could be observed on their x-ray films were apparent fibrous or sclerotic rests of their disease processes, while the initially small lesions became completely invisible. The drug treatment preceding the onset of four-drug treatment consisted usually of isoniazid and dihydrostreptomycin in various dosages for two weeks at the referring hospitals, but in 10 cases no treatment whatever had been given prior to the sudden onset of four-drug treatment as soon as the diagnosis was clear. All of these 10 patients became asymptomatic within a few weeks of the onset of the treatment and their sputums disappeared, only the first one or two specimens being found to contain acid-fast bacilli. Gastric contents that were subsequently obtained during a follow-up period of up to six months failed to show any growth of acid-fast bacilli. The x-ray films showed a corresponding disappearance of the pulmonary activity, and the erythrocyte sedimentation rates returned to normal in the majority of the cases.

Two further patients had had twenty days of drug treatment preceding the start of the four-drug treatment and a third one twenty-two days of such preceding treatment. These 3 patients showed practically the same degree of improvement as described in the preceding paragraph. The four-drug treatment in these 3 cases was no longer than two months in two cases and one month in one case, all patients becoming subjectively perfectly healthy during such short treatment. The big left upper lobe cavity that was present in one of the patients disappeared

completely during the treatment.

A fourth patient who had been given drug treatment for a month before onset of four-drug treatment, during a part of this one month receiving three drugs (isoniazid, streptomycin, para-aminosalicylate), showed less rapid clearing of his extensive bilateral tuberculosis after onset of the four-drug therapy (no noticeable clearing before such onset). Otherwise sputum disappearance, gastric negativity for acid-fast bacilli and subjectively healthy feeling were noted, as in the preceding three patients.

A fifth patient, the young female with pleural effusion, had also received drug treatment with isoniazid and streptomycin for one month prior to onset of the four combined drugs and had still a sizable pleural effusion after the month of such initial treatment. About three weeks after the onset of the four drugs simultaneously no definite fluid could be discerned, the patient having become otherwise healthy earlier.

A sixth patient also had received drug treatment for only a month prior to the inclusion in the present study. However, in contrast with the others already described, diagnosis of his pulmonary tuberculosis had been established fifty-eight months prior to the onset of the drug treatment and he had previously been treated on prolonged bed rest. With the exception of less rapid x-ray clearance he showed approximately the same rapid improvement on four-drug treatment as the preceding patients. In the previously described patients the diagnosis had been made within at most two and one-half months prior to the start of the combined four drugs.

A seventh patient had been given drug treatment for one month and ten days before the four drugs were started. In spite of simultaneous administration of isoniazid and streptomycin during this one month and ten days, (the streptomycin having been given a gram daily for a few weeks), he remained critically ill, with temperature ranging to 103 F. degrees, marked tachycardia, prostration,

copious sputum and extreme emaciation. When the treatment was intensified to the four drugs with the daily injections and dosages described earlier in this paper there was an initial difficulty in administering because of gastrointestinal symptoms, and the paucity of the muscular tissue. These initial difficulties were surmounted with some persistency, and within less than two months after the onset of the intensified treatment patient refused to stay in bed and insisted in being discharged because he believed himself to be cured. His last sputum containing acid-fast bacilli on examination occurred at the end of two months of the intensive four-drug treatment. The x-ray that had failed to show any definitely intact lung tissue at the onset of the four combined drugs revealed clearing of the lower lungs at the end of the two months of intensified treatment, creation of large air spaces occupying the locations of upper lobes, and cyst-like formations in the mid-lung fields, without the character of tuberculous cavities.

Another patient, a 25-year-old Negro female with complete consolidation and cavitation of one entire lung and involvement of the contralateral upper lung and severe toxicity and hyperpyrexia, who received combined two-drug therapy for one and one-half months without any apparent improvement before the four simultaneous drugs were started failed to show remarkable improvement also during the four-drug treatment, although definite improvement in her general well-being occurred during the two and one-half months of four-drug treatment. It is quite possible that she had an empyema or a non-specific lung abscess in addition to her extensive pulmonary tuberculosis, but this could never be proved before she was transferred to another hospital for the reason mentioned above.

The two patients who had received previous two-drug therapy for two and one-fourth or two and one-half months immediately before being included in this study also became clinically and bacteriologically healthy during the one and one-

fourth to two months of four-drug treatment. One of them showed complete clearing of the lung lesion on the x-ray while the other showed gradual calcification and sharp decrease and delimitation of the universally scattered and confluent lesions and cavitations present in both lungs at the onset of the four drugs combined.

The remaining patients, 15 in number, had received combined two-drug treatment for at least four and one-half months preceding the onset of four-drug therapy, most of them considerably longer than four and one-half months, with relapses occurring before. The minimum four and one-half months mentioned here is the minimum drug treatment *immediately* preceding the combined four drugs. One patient had received continuous drug therapy for five years prior to onset of the four-drug treatment. As mentioned above, however, all patients had bacteriologically proved activity of their tuberculosis at the time the simultaneous four drugs were started. Eight of these 15 patients with long preceding treatment without result were converted to sputum or gastric negativity for acid-fast bacilli during the intensive four-drug treatment. Duration of treatment was less than four months in all cases, mostly between two and three months, and there was definite x-ray and clinical improvement during the intensive treatment, and all of the 8 patients became subjectively healthy. Some of them had residual cavities visible on the x-ray films. In each there was a question whether these cavities actually represented so-called sclero-cystic cavitations or air spaces without active disease in their walls or surroundings, as described in the literature, since there was no x-ray evidence of activity surrounding these cavities. It is again deplorable that further observation was made impossible but these initial results should be sufficiently encouraging to other chest physicians.

Of the 7 remaining patients who failed to become bacteriologically negative for acid-fast bacilli during the four-drug treatment, 5 acquired such a sharply limited disease in their lungs that they could

be considered as candidates for successful surgical resection, just before they were transferred to other hospitals. Their general condition had also improved sufficiently to make them good surgical risks.

There remain two most chronically and apparently hopelessly ill patients who could not be brought into operable condition during the four-month intensive four-drug treatment. They both had extensive bilateral cavitation and chronic toxicity. One of them, a diabetic, had been treated previously for five years at the same hospital, and the other was practically a skeleton and had been treated for one and one-half years unimproved in this condition. In both cases viomycin had also been tried without effect in addition to combinations of isoniazid and streptomycin in conventionally approved dosages. However, after they had been given the trial of combined four drugs in dosages as described earlier in this paper, in the non-diabetic, greatly emaciated patient for two months and five days, and in the diabetic patient for four months, there was no doubt that for the first time during their long and severe illness there was both a clinical and x-ray improvement. The previous follow-up films had only shown gradual spread of the disease process, or at the best a stationary condition for months. Both of these patients had been considered as totally incapable of taking even small doses of para-aminosalicylate, as shown by several unsuccessful attempts during their long hospitalizations, but both were finally able to take 5 grams of para-aminosalicylate three times daily without side effects. It is quite conceivable that if there had been an opportunity to continue the intensive four-drug treatment longer, although relatively much shorter than the confinement for life (at least in one of the cases) understood in their cases the success could have been sufficient to make these patients at least operable. One of these patients was actually expected to die at any time just prior to the onset of the four-drug treatment, so that her case was apparently the only occasion in which the four-drug

treatment actually prolonged hospital confinement, in prolonging her life. A prolongation of confinement in this sense will, however, most likely be considered as encouraging by the medical profession and others.

Finally, although not subject to any evaluation, it may be worthy of mention that an impression was gained that a more regular administration of the three doses of isoniazid and para-aminosalicylate during the twenty-four hour period seemed to accelerate the improvement more markedly than the common and routine "t.i.d." administration that means that the three doses are given with at most four hours' intervals during daylight hours, thus leaving at least sixteen hours without medications.

SUMMARY

In this paper initial encouraging results obtained by administration of four anti-tuberculous drugs (streptomycin, dihydrostreptomycin, isoniazid and sodium para-aminosalicylate) in relatively high dosages and simultaneously are reported. There were no complete failures among the 41 patients subjected to the treatment and study, although 4 patients were not considered satisfactorily improved from the standpoint of quite strict requirements of this paper, i.e., sufficient improvement in order to be able to discharge the tuberculous patient bacteriologically negative, subjectively healthy and inactive as determined by other means, after *less* than six months in *all* cases. The special circumstances in the four apparently resistant cases are described, and it is pointed out that at least 2 of these 4 patients, who were considered definitely hopeless on the approved two-drug or even three-drug treatment in conventional dosages, showed their first improvement during the four-drug treatment.

It is mentioned in the paper that because of the closing of the hospital where this study was conducted a sufficient follow-up could not be undertaken, but the preliminary results are considered sufficiently favorable and indicative of progress in the treatment of tuberculosis in

order to justify publication of this paper.

It is gratifying to read in a recent article¹ that another clinical investigator has come to the conclusion that three-drug combination, rather than two-drug treatment, from the beginning is the choice in tuberculosis, but the present paper goes further and suggests four drugs in combination from the start.

REFERENCE

1. Allen, A. R. et al.: *Dis. of the Chest*, 28:537 (November) 1955.

A RIGHT ANGLE RETRACTOR FOR SMALL INCISIONS

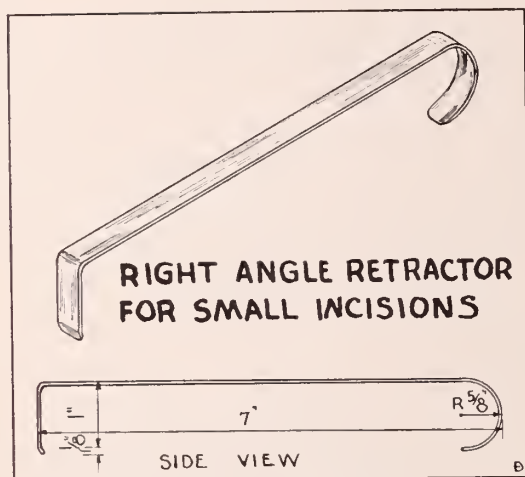
EVERETT L. DREWES, M. D.
NEW ORLEANS

The need for a retractor convenient to use in smaller incisions and to facilitate entry into the abdominal cavity through moderate sized McBurney incisions has been realized for some time.

When using the regular Parker retractors in McBurney incisions, force must often be used to push them through the muscle. This often traumatizes the muscle unnecessarily and may damage the blades of the Mayo scissors used to split the muscle. A retractor with a thin flat blade at one end can both separate and retract the muscle and the straight flat blade is easily inserted between the blades of the scissors. When the operator enters the peritoneal cavity the reverse is true—a curved blade is more efficient to retract the tissues.

A retractor was designed for use in the above situation with a straight blade on one end. This blade was at a right angle to the main body of the retractor which is used to grasp the instrument. On the other end a curved blade of one hundred eighty degrees of arc was made.

The most convenient length instrument was seven inches long, the blades were three eighths by one inch. The thickness of the metal, either chrome plated spring brass or stainless steel, was three sixty-fourths of an inch to give the desired rigidity.



The retractors can be made in different widths to satisfy the needs of different operators. The narrow retractors three sixteenth or one fourth inch in width have been found to be very useful and are used regularly in tracheotomies. The wider retractors have become routine instruments on trays set for thyroidec-tomies.

The retractors illustrated and described were made by the author and have been in use for some time at Mercy Hospital.

PRESIDENT'S ADDRESS
AMERICAN RHINOLOGIC SOCIETY

RALPH H. RIGGS, M. D.
SHREVEPORT

At this second annual meeting of the American Rhinologic Society it would seem appropriate to ask ourselves two questions: (1) What are our objectives and (2) how can they be realized? We have been together as a group long enough now to be thoroughly familiar with our objectives.

Our first objective is to *learn*. Surely this is the reason that the first two or three in our society were even drawn together. The story has been told so many times that it is now almost a legend amongst us. There are many things that we want to learn and must learn. We

must understand the function of the nose. To do this we must know something about each part of the nose and its relation to every other part. Naturally all of this requires a knowledge of gross and microscopic anatomy, embryology, physiology, and pathology.

Then, we must realize that the nose is just a part of the body as a whole. We want to learn more about how it affects every other part of our make-up, including the psychologic and subconscious.

Diagnosis is not only the most difficult phase of medicine but also the most important. In the field of Rhinology we must think in terms of an anatomic, physiologic, psychologic, and even psychiatric diagnosis. Those of us who have been together with Dr. Cottle for a decade know now, better than ever how difficult it is to make a *correct* diagnosis.

We must learn procedures, not only how to use them (technique) but also when, for until we learn the indications of rhinologic procedures, we really have no use for any technique. Routine surgery is not one of our objectives.

We must learn order (not routine). Order in the operating room is essential. By this is meant that through cooperation with the nursing staff, the room should be ready to receive the patient. There should be quiet, no unnecessary delay in preparing the patient for the operation, and a realization that every patient is entitled to receive the best from every one.

Order is also important in the performance of the operation. There must be order in the way instruments are set up and the way in which they are used. Procedures should be dictated as they are being performed, for good records are an important part of the practice of medicine. Incidentally, rhinologic operations are not done in a routine manner but they should certainly be performed in an orderly manner. Finally, there can be no order in the operation unless the surgeon thinks in an orderly manner, and above all, has control of both himself and his patient.

Another objective of our society is to

* Presented at meeting of the American Rhinologic Society, Chicago, Illinois, at the Palmer House, October 13, 1956.

teach. This objective could well be considered along with learning, because in order to teach, one must have learned his subject well. By teaching we have been able to learn more and more.

In our teaching we must reach a large number—our fellow rhinologists, the general practitioner, residents, interns, and medical students. At present our contacts include all of these. Our fellow rhinologists are invited to our meetings and many have been in Dr. Cottle's courses. As you know, most of those in each of his courses are affiliated with a university, and by this means, residents, interns, and medical students are becoming more conscious of our specialty. This has been the direct result of the insistence of Dr. Cottle that teaching be a part of the work of our society.

In achieving our objective to teach, each of us is morally obligated to present papers before our local, regional, and national medical societies and to teach the general practitioner in our area. Our record during the past several years of the places we have been and the things we have done shows that we literally have been a teaching group or a traveling university.

Our final objective is the desire to *share* our knowledge and experience. This society was founded with a view to sharing and I predict its progress will be in direct relation to the sharing efforts of its members. We must share our knowledge, our experiences, our work, and our lives. We must know not only how to give but also how to receive, for without both, sharing is not possible.

These are our objectives and they can be realized. They will be realized when enough of us reach maturity. According to Dr. Edward A. Strecker, maturity is a quality of personality made up of a number of elements, such as reliability, persistence, endurance, independence, determination, cooperation, flexibility, tolerance, patience, adaptability, and compromise.

Basically, maturity represents a wholesome amalgamation of two things: (1) *Dis-*

satisfaction with the status quo, which calls forth aggressive constructive effort, and (2) social concern and devotion. Emotional maturity is the morale of the individual. I look forward with you to this day of maturity.

—o—

A SMALL TOWN GUIDANCE CENTER IN RETROSPECT

IRVIN A. KRAFT, M. D. *
NEW ORLEANS

The mental hygiene clinic program in Louisiana was initiated in 1948 by the State Hospital Board with centers established in Shreveport, Alexandria, and Baton Rouge. At the time of this writing, there are eight facilities in the program. Latitude and variations of procedure are encouraged in the different centers. There are, however, many consistent administrative and medical features, such as: diagnostic categories, statistical reporting, treatment goals, etc. In this paper the aim is to describe the development of the Calcasieu Area Guidance Center, Lake Charles, Louisiana, from September, 1951 to February, 1956, in order to demonstrate the multifaceted nature of such a guidance center in a small, expanding community.

Originally, the Guidance Center was founded by the efforts of local interested citizens including professional, business, and other persons. When the original director resigned because of the pressure of his private practice, a psychiatrist from one of the medical schools was assigned to the clinic. A psychologist and a psychiatric social worker also were newly employed, and the Center began larger operations in September, 1953.

To understand more completely the functioning of this Center, it is helpful to picture the area it was designed to serve. Lake Charles is the focus for Calcasieu, Cameron, Jefferson Davis, and Beauregard Parishes with a population approximating 200,000. Lake Charles has

* Assistant Director, Family Study Unit, Department of Psychiatry and Neurology, Tulane Medical School, New Orleans, Louisiana.

expanded from a population of 21,000 in 1940 to an estimated 48,000 in 1956. The population of the peripheral area now totals 60,000. The Air Force reactivated Lake Charles Air Force Base in 1952, and made it a permanent installation in 1955. Military personnel probably number over 5000, most of whom have families and live nearby.

Thus, Lake Charles and the surrounding areas were involved in the rapid growth of populations and industrial developments with the resulting socio-medical complications. The Guidance Center in meeting some of these needs was guided by a board of directors made up of local citizens, who functioned in an advisory capacity under the direction of the mental hygiene division of the State Hospital Board, and later the Department of Institutions. The staff consisted of a clinical psychologist, a psychiatric social worker, the psychiatrist (medical director) and a secretary. The psychiatrist, who was part-time, flew to Lake Charles weekly, spending one or two days there. Primary financial support for the Center was a State-Federal allotment, which paid the salary and fees of the personnel. Funds raised from persons in the local area through Calcasieu Area United Appeals took care of the rent, utilities, and some miscellaneous expenses.

The customary pattern of a guidance center involves a rather lengthy intake procedure, which is designed to winnow out from the people seeking help those whom the set services could aid. These cases are children with mild to moderately severe behavior disorders, mild neurotic derangements and the maladjustments of adolescence. Organic and severely disturbed children usually are referred elsewhere. Children whose parents are psychotic or very difficult to work with also may be rejected. The focus of treatment is primarily on the mother-child relationship, with the child's therapist usually being a psychiatrist or psychologist. The mother is given case work treatment by the social worker. In many instances the traditional procedures of the guidance

clinic have a high ratio of personnel to case with a large amount consumed by the intake, diagnostic, and treatment procedures.

The traditional methods of a guidance center were altered to meet the multiple needs of the area and new techniques were devised. The services grouped themselves into five main categories. First, there was the customary role of a guidance center as a diagnostic and treatment facility for the emotionally disturbed child. Parents were usually involved in the therapy whenever possible. Sometimes a mother or father alone or both parents together would be seen in relationship to the child's problem. The focus of the Center always was the child and his adjustment.

The second set of functions consisted mainly of consultation service to other agencies. These were: the Department of Public Welfare, Children's Division and Public Assistance, Boys' Village, Crippled Children's Division of the State Department of Health, Public Health Nurses, and the Public Health Clinic in Lake Charles. The Center furnished psychometric evaluation for some, but the main emphasis was on the evaluation of the patient's total personality, rather than intelligence quotient alone. Data concerning the personality potential of the individual were given to the agencies. Some patients were taken into a treatment plan which was coordinated with other agencies having contact with the patient.

The third group of services could be called the community role. The Center soon became the focus of a number of activities which had been done before by various individuals. These included: commitment of psychotics to state hospitals, control and aid to ministers in their counselling role. This sometimes led to the Center's doing psychotherapy to complement the efforts of the general practitioner or minister who saw the couple initially.

A fourth category involved the education of the public, of the schools and other groups to mental health and illness.

Talks were made to the P.T.A., to nursery schools and church groups. Attempts were made to aid the school system in understanding the problems of the gifted child, the school phobic and the brain-damaged child. Discussions with teachers brought out some of the intense interpersonal aspects of the teacher-child relationships. Advice and aid to families with geriatric problems often came to the fore. In sum, the Center attempted the roles of agencies such as family service, school social workers, and a mental health society.

In the fifth grouping of functions the Center was oriented to serve the family doctor in many ways. There were the elderly patients who posed the problems of diagnosis, especially regarding organic factors. Psychological testing and social case work might uncover family and other situations which were aggravating the patient, often with a resulting psychosomatic disorder. Attempts were made to encourage group activities of the aged and to provide outlets for their unused energies and talents.

There would be occasions before surgery for one of its members when the family's turmoil and anxiety could be relieved. The pediatrician and family doctor could turn to the Center for aid in handling emotional problems of a diabetic child and his parents. Organic syndromes, such as cerebral palsy, mental deficiency, hemiplegia, postencephalitic and traumatic brain damage in children were evaluated. The families were counselled in conjunction with the plan of therapy of the family physician. In that manner the difficulties of rehabilitation were handled more satisfactorily.

Gynecologists referred sterility and fri-

gidity problems to the Center for psychological and psychiatric evaluations to complete their own studies. Some patients entered brief or long term therapy to adjust to the difficulty and to plan for alternatives such as adoptions. There were hospital consultations where the use of the Bender-Gestalt and other tests helped the surgeon to rule out a brain tumor and reach a diagnosis of functional disorder.

The information in the accompanying table summarizes the use made of the Guidance Center. Referral sources were consistent in their proportions. One can see here (Table 1) that the Center was utilized heavily by the physicians of the area.

TABLE 1
REFERRAL SOURCES

September, 1953-March, 1956	1118 Applications	
	Total	Per Cent
Self (including friends, parents)	410	37
Physicians (local)	258	23
Schools (local)	214	19
Others (incl.: D.P.W., juvenile aid, religious)	236	21

The large per cent of self-referrals might reflect the many talks and appearances the staff made at community functions.

This cursory description gives some picture of the services which a guidance center can furnish the community. The Guidance Center in Lake Charles has served as a general family-medical-treatment agency. It has helped the physicians and others of the community to perform their duties more completely.

Note: Much of this material was obtained through the friendly cooperation of the staff of the Calcasieu Area Guidance Center. I wish to express my thanks to them.

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MEDICAL ASPECTS OF MOTOR VEHICLE ACCIDENTS AND THEIR PREVENTION

In 1956, there were 40,200 fatalities resulting from traffic accidents. To help realize what these figures mean, Howard A. Rusk¹ has stated that in the first ten days after D-day the Americans lost on the beachheads of Normandy 11,000 men. During those same ten days we lost 26,000 civilians, killed and wounded, on the highways and in the industry of this country. It is estimated that for each person killed on the highways there are 35 injured, and

probably 100,000 of these are permanently disabled each year. The modern passenger car is the third leading cause of death in ages 5 through 9; the second most frequent cause observed in ages 10 through 14; and the foremost cause in ages 15 through 24.

As the third most frequent cause of death nationally, motor vehicle accidents are a major public health concern, and accordingly, we, in medicine should take a certain amount of leadership in attempting the solution of this problem. Vast as the fatality is now, it is calculated that in ten years there will be a one-third increase, with the probability of 53,000 fatalities in 1966.

Realization of the dangers involved have brought engineering and related influences to progressive improvement of streets and highways with the prospect of a steady further development in this field in the ten years ahead.

In the face of the steadily increasing total of highway deaths, attention has been focused by many investigators on the motor vehicle itself—the so-called “misguided missiles.” Following a paper by Fletcher D. Woodward, in 1948,² under the title *Medical Criticism of Modern Automotive Engineering*, changes in design and structure of automobiles have relieved some of the dangers. Detailed analysis as to what these dangers were and the circumstances of their occurrence produced some surprising facts. One car in twelve is expected to be in an accident. Over 50 per cent of the accidents take place under 40 miles an hour. Ejection from the car more than doubles the risk of moderate through fatal grades of injury. Ninety-five per cent of accident victims survive, but 24 per cent sustain moderate to fatal grades of injury. Head and facial injuries occur in approximately 75 per cent, and injuries to the lower extremities in approximately 50 per cent. In the words of one investigator, “obviously when people are hurt in cars, they are hurt all over.” In successive stages of investigation attention has been given to the

matter of reducing the dangers of the steering wheel, padding the instrument panel, providing door locks which will not allow the doors to swing open, and also, providing seat belts. It has been stated that the risk of doors' opening has been decreased by 33 per cent, and that this factor together with the effect of seat belts and the other measures mentioned, including retaining the passenger in the protective shell of the car, have reduced the risk of injury in varying circumstances as much as 60 per cent.

However desirable it is for the vehicle to be made as safe as possible, measures of this sort will not prevent accidents. It is obvious that the third element in the accident situation, the driver himself, is the most important. In some tabulations,³ 25 per cent of the individuals involved in fatal accidents have had some ingestion of alcohol. In 1955, more than 41 per cent of the deaths and more than 35 per cent of the injuries due to motor vehicle accidents occurred on Saturdays and Sundays. Three out of four were in clear weather on dry roads. Eighty-five per cent involved in accidents were passenger cars. Twenty seven per cent of all drivers involved in fatal auto accidents in the United States in 1955 were under 25 years of age. Four to 8 P.M. are the most dangerous hours of the day to drive, and 1 out of every 75 persons in the United States became a traffic casualty in 1955.

It is obvious from such considerations as these, and certain others brought out in similar investigations that the important factor in the majority of accidents is the driver. These accidents are the result, on the one hand, of physical conditions which are susceptible of examination in a certain degree. Standards of physical fitness have been prepared. If these were adhered to by effective driver licensing and control procedures, some that are now a menace would be excluded from the highways. On the other hand,

the psychological and psychiatric characteristics of individuals which determine whether they will be good or bad drivers are not easily determined. It is recognized so far that "a man drives as he lives," but much more is needed to be known about the attitudes and personal adjustments of drivers.

In a study of 35,000 accidents over a twenty year period Schulzinger⁴ concluded that chief among the components of the accident syndrome was the mental maladjustment of the accident victim, temporary or prolonged, to his environment. He regards accidents as a widespread endemic affliction, and "the 15 per cent of the population that causes 85 per cent of the accidents" is conceived as a shifting group with new persons constantly joining and leaving. In other words, accident proneness, at least in part, is dependent upon the emotional stresses of the day. As has been previously stated in an editorial in the AMA,⁵ the right to drive an automobile must become a sought after privilege and not a vested right. The limited physical and mental capacities needed to learn to drive are no measure of the ability to operate the vehicle safely and responsibly in modern traffic.

We, as physicians, have a responsibility to point out to licensing authorities and to our patients the need for adherence to proper physical standards, on the one hand, and on the other, to work for a system of licensing, supervision, and law enforcement that will reduce the number of irresponsible drivers.

1. Rusk, Howard A.: The importance of Accident Prevention, *New York State Journal of Medicine*, 56:3870 (Dec. 15) 1956.

2. Woodward, F. D.: Medical Criticism of Modern Automotive Engineering, *J.A.M.A.* 138:627 (October 30) 1948.

3. Travelers Insurance Companies: Fatal Fallacies, 1956 Book of Street and Highway Accident Data.

4. Schulzinger, Morris S.: Accident Syndrome; A Clinical Approach, *A.M.A. Arch. Ind. Health*, 11:66 (January) 1955.

5. Editorial: Death on the Highways, *J.A.M.A.* 163:262 (Jan. 26) 1957.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.



PAUL D. ABRAMSON, M. D.
President
1956 - 1957

Dr. Abramson will have completed his duties as President on May 8, 1957.

Dr. Abramson is a native of Shreveport and received his academic education in the public schools in Shreveport. On graduating from public school, he attended the Louisiana State University and later Tulane, where he received his B.S. degree and graduated in medicine from Tulane in 1929.

Dr. Abramson had his military service in the U. S. Army during World War II serving as a Major, and was Chief of Surgery of a General Hospital in E.T.O.

Dr. Abramson has not only many medical affiliations, but participates quite widely in civic affairs, having served as President of the Shreveport Little Theatre,

is a Past-Potentate El Karbah Shrine, is a thirty-second degree K.C.C.H., Scottish Rite Mason, member of the Shreveport Rotary, and is the medical co-ordinator of Shreveport-Bossier City Civil Defense.

Dr. Abramson is a member of the Louisiana State Board of Practical Nurse Examiners, Past President, Louisiana Chapter of American College of Surgeons, Senior Surgeon, North Louisiana Clinic and Hospital, Consultant in Surgery, Veterans Hospital, Shreveport, and Chief of Surgery at the Confederate Memorial Medical Center, Charity Hospital at Shreveport, and Clinical Professor of Surgery, Post Graduate Division, Shreveport, Louisiana State Medical School.

Dr. Abramson is a member of the Shreveport Medical Society; Louisiana State Medical Society; American Medical Association; Surgical Association of Louisiana; South Eastern Surgical Congress; New Orleans Surgical Society; Fellow of American College of Surgeons, and a Diplomate of the American Board of Surgery.

Dr. Paul D. Abramson, our President, has been very active during the past year in performing the arduous duties coincident with the demands of his office. Dr. Abramson has represented the Society at many meetings, both state and national. He has acquitted himself splendidly and has served the Society well and efficiently.

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POSTGRADUATE TELECAST ON "EMOTIONAL PATIENTS IN OFFICE PRACTICE"

The Societies of Kansas, Oklahoma, Louisiana, Florida and North Carolina have agreed to participate in the first "inter-meeting" television seminar, in which Smith, Kline & French Laboratories will link up their five annual meetings by closed-circuit television. The program will originate in Chicago where the panel and case material will be televised to the annual meetings of the five participating medical societies.

TIME: Monday, May 6th, 1-2 P.M. (C.S.T.)

Case histories of patients who so often bring their emotional problems to the general practitioner—and actual clinical interviews—will be presented to a panel of two psychiatrists, one internist, and one general practitioner, for their discussion. Following each presentation of an emotional patient, members of the five medical societies will be asked to participate in a discussion concerning the patient's care and treatment. Special audio equipment will enable this "inter-meeting" exchange to take place.

The panelists will include Dr. C. Knight Aldrich, Psychiatrist, University of Chicago; Dr. C. H. Hardin Branch, Psychiatrist, University of Utah; Dr. E. Irving Baumgartner, Secretary, AMA Section on General Practice; Dr. Andrew S. Tomb, Chairman AAGP Liaison Committee on Mental Health.

Each medical society will provide a moderator who has a background in psychiatry or an internist or general practitioner who has a working knowledge of this particular field.

This will be the first time five medical meetings across the country will be linked into a closed circuit television network, and our Society is indeed fortunate to be one of the participating states in this program. We urge all members to attend this session which will take place on Monday afternoon, May 6th from 1 to 2 P.M. (CST) in the International Room at the Roosevelt Hotel.

This exceptional postgraduate seminar is made possible by the cooperation of the Mental Health Education unit of Smith, Kline & French Laboratories with the AMA Council on Mental Health and the Louisiana State Medical Society.

Do not miss it. You will be sorry if you do. This is a rare opportunity to see such a program.

IMPORTANT

All future orders for the first volume of the Rudolph Matas History of the Louisiana State Medical Society should be sent to J. A. Majors Company, 1301 Tulane Avenue. Make checks for \$5.00, plus sales tax, payable to J. A. Majors Company and mail to the above address.

HEALTH INSURANCE

Hospital and medical care payments, to help cover the cost of treatment and physicians' services, amounted to \$2.1 billion in 1956, the Health Insurance Institute has reported. This figure, the Institute stated, includes replacement of income lost through sickness or disability. A survey conducted among the country's insurance companies revealed that reimbursements through group insurance plans in force during the year totaled \$1.5 billion, or 20.9% over 1955, while payments through individual policies totaled \$601

million, a gain of 12.8%, for an over-all increase of 18.5% in benefit payments over 1955.

Payments to policyholders covered under hospital expense insurance, for in-hospital services, amounted to over \$855 million, the Institute further reported, with \$629 million paid under group policies and \$226 million paid by insurance companies to individual policyholders.

Reimbursements to help cover the cost of surgeons' fees amounted to \$346 million, with \$273 million received by holders of policies under group plans, and \$73 million going to persons covered by individual insurance policies.

A total of \$58 million was paid to persons under regular medical expense contracts, for non-surgical medical care and treatment, \$47 million through group policies, and \$11 million to individual policyholders.

Benefit payments to those protected against the cost of serious, or catastrophic illness or accident through major medical expense insurance, including supplemental and non-supplemental coverage to the basic health cost plans, amounted to over \$65 million. Group plan payments totaled \$62 million, while individual contract benefits were more than \$3 million. A further breakdown of the payments made for services covered by major medical expense insurance is as follows:

Hospital expense	\$31,641,000
Surgical expense	18,483,000
Medical expense	7,694,000
Nurse	4,185,000
Drugs	1,214,000
Other	1,214,000

In concluding its report of payment for health care by the insurance companies throughout the United States, the Institute stated that the increase in such payments reflects the continued efforts of the public to pay its doctor and hospital bills through the voluntary non-governmental mechanism.

REPORT OF THE 12th RURAL HEALTH CONFERENCE OF THE AMERICAN MEDICAL ASSOCIATION, LOUISVILLE, KENTUCKY, MARCH 7-9, 1957, AT THE BROWN HOTEL

The twelfth Rural Health Conference of the American Medical Association was held in Louisville, Kentucky, with an attendance of about 650 people. The largest representation was from Kentucky and the local areas around Louisville, southern Ohio, and southern Indiana.

The theme this year was "Together We Build" and all of the papers were tuned toward the feeling that the individuals and the communities should work with the medical profession and the other organizations to bring about a better health program for the individual and the community in which he lives.

The enthusiasm of these conferences seems to never play out. The Rural Health Conference has probably done more for public relations than any other one organization within the confines of the American Medical Association. This is the one meeting in which the rural people, the Farm Bureau, the editors of the Farm Magazines, and the rural communities can come in and go over their problems with the doctors, with the Rural Health Committee, with the hospital people, and all the others who are interested in better rural health.

Again and again as these conferences go on we have outstanding people over the country who are willing to contribute to the general knowledge of this group. Every year we see what someone is doing in a rural community to better its health facilities.

The nine members of the Rural Health Council of the American Medical Association are under the able leadership of Dr. F. S. Crockett of Lafayette, Indiana, and all of the men are of broad experience and they represent every section of the country. They have contributed whatever is necessary for the betterment of the section in which they live.

Dr. M. C. Wiginton and your reporter attended this conference in its entirety. Of the twelve conferences held we have been to eleven. Each one missed one on account of illness. We have been on the Rural and Urban Health Committee of the State Society ever since its incipency. We have each held the presidency of the Louisiana Health Council, and have tried to stimulate interest in

Rural Health throughout our state.

It is through the State Medical Society that more doctors are now taking a more active interest in Rural Health affairs.

J. P. Sanders, M. D., Chairman,
Committee on Rural and Urban Health.

LETTER OF THANKS

The following letter has been received from Mrs. Mary Evelyn Parker, Commissioner of Public Welfare; State of Louisiana:

"We would like to thank the doctors throughout the state for their fine cooperation in answering the questionnaire that was sent out by the Louisiana State Medical Society in regard to the Department of Public Welfare.

"We particularly appreciate the services of the individual doctors on the Executive Committee for their endorsement and formation of our Medical Advisory Board. We know that their advice and fine cooperation will be extremely helpful to us in formulating our medical care plan.

"Our special thanks to you, Dr. Abramson, for your splendid cooperation and the hours of your valuable time that you have contributed in conference, to Dr. H. H. Hardy, Chairman of the Medical Indigency Committee, and also to your secretary, Dr. C. G. Cole who devoted so much time to handling this questionnaire.

"We would appreciate having our thanks made known through the Journal of the Louisiana State Medical Society to all the doctors in the state."

MEDICAL NEWS SECTION CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

WORLD CONGRESS OF GASTROENTEROLOGY AND THE 59TH ANNUAL MEETING OF THE AMERICAN GASTROENTEROLOGICAL ASSOCIATION

The World Congress of Gastroenterology was initiated by the International Society of Gastroenterology and is being supported by the Inter-

American Association of Gastroenterology. The American Gastroenterological Association is acting as the official host for this meeting. Dr. Gordon McHardy is a member of the Central Committee for this meeting and chairman of the Scientific Exhibits Committee.

Physicians and scientists throughout the world

with a common interest in diseases affecting the gastrointestinal tract will have the privilege of convening in one assemblage to share their views. The World Congress of Gastroenterological Societies will meet in Washington, D. C., May 25 through May 31, 1958, at the Sheraton-Park Hotel.

Diseases have been chosen for discussion which show variations in epidemiology and clinical behavior in various parts of the world. Two half day sessions will be devoted to brief presentations of original scientific work carefully selected from centers throughout the world.

Titles and Abstracts to be considered by the Central Committee for presentation at the sessions of the Congress should be submitted through the Secretary of each National Society. The abstracts should not be longer than 300 words. The final date for receiving Titles and Abstracts for consideration by the Central Committee will be June 1, 1957.

Nonmembers of component societies are cordially invited to attend, and should send their registration blank to the Secretary-General. Registration blanks may be obtained through the Secretary of the Congress, and from the officers of your national society.

All inquiries and communications to the congress should be directed to: Dr. H. M. Pollard, Secretary-General, World Congress of Gastroenterology, University Hospital, Ann Arbor, Michigan.

EDUCATION OF DIABETIC PATIENTS

The film "Urine Sugar Analysis for Diabetics", developed in cooperation with the medical profession, is available at no charge to the Medical and Allied Professions through Ames Company, Inc.

The film was made as a visual aid to be used in the education of diabetic patients and shows the relationship between carbohydrates and insulin. It also explains in lay language the meaning of various diabetic conditions. It has been produced on 16 mm. film in color and sound track with a running time of approximately 10 minutes. Appropriate "hand-out" literature accompanies the film.

Showings at Diabetic Clinics, Diabetic Lay Societies and other diabetic groups must be requested by the Medical or Allied Professions to Ames Company, Inc., Elkhart, Indiana or an Ames representative.

REFRESHER COURSES

The following short refresher courses will be given at The Children's Hospital of Philadelphia in May and June 1957.

1. PEDIATRIC ADVANCES FOR PEDIATRICIANS AND GENERAL PRACTITIONERS. May 27 through May 31, 1957. Conducted by the

Staff of the Children's Hospital of Philadelphia, in collaboration with the Department of Pediatrics of the University of Pennsylvania and the Staff of the Camden Municipal Hospital.

Tuition—\$110.00.

2. PRACTICAL PEDIATRIC HEMATOLOGY. June 3, 4 and 5. Conducted by Irving J. Wolman, M. D. and other members of the Hematology Department of the Children's Hospital, under the auspices of the Graduate School of Medicine, University of Pennsylvania.

Tuition—\$75.00.

3. BLOOD GROUP INCOMPATIBILITIES AND ERYTHROBLASTOSIS FETALIS. June 6 and 7. Conducted by Neva Abelson, M. D. and Thomas R. Boggs, Jr., M. D. of the Philadelphia Serum Exchange of the Children's Hospital of Philadelphia, under the auspices of the Graduate School of Medicine, University of Pennsylvania.

Tuition—\$50.00.

Inquiries should be addressed to Irving J. Wolman, M. D., Children's Hospital of Philadelphia, 1740 Bainbridge Street, Philadelphia 46, Pa.

FIRST BOOK ON WIRE BRUSH SURGERY PUBLISHED BY LOUISIANA PHYSICIAN

A Tulane University physician has written the first book on a recently developed method for correcting scars caused by acne and other skin defects.

"Wire Brush Surgery", the title of the book, was written by Dr. James W. Burks, Jr., associate clinical professor of medicine in the division of dermatology of Tulane's school of medicine.

While the technique is of very recent origin, it has been editorially endorsed in the "Journal of the American Medical Association" and accepted by the committee on cosmetics of the AMA.

Wire brush surgery, Dr. Burks points out in his book, is a procedure which takes place in a doctor's office, not requiring hospitalization. With the use of a high speed rotary wire brush, various layers of skin are removed to a depth necessary for the removal of the defect.

Healing takes place beneath a crust without scarring in seven to ten days in a manner similar to a brush burn.

New skin develops from the lining of various pores and glands of the skin, Dr. Burks reports. Fortunately the face is richly provided with these pores and glands, so that the most frequent site of this type of surgery also provides the best end results.

The conditions for which the procedure is recommended are: scars caused by acne and pox diseases, scars resulting from accidents, and unwanted tattoos. The procedure follows freezing of the skin which serves the double purpose of anesthetizing and hardening the area to be

planed. Freezing requires 10 to 20 seconds.

The rotary wire brush is then used to the desired depth. The first planing provides from 40 per cent to 60 per cent improvement. Subsequent planings may show added improvement but in diminishing percentages.

Dr. Burks writes that his planing does not provide a miraculous new skin free from all defects. But following wire brush surgery, the glazed, tensed scar tissue is completely gone and fresh skin takes its place and has normal anatomical marking, he points out.

The book was published by Charles C Thomas Co., Springfield, Ill.

HAZARDS OF LOW-PROTEIN DIETS OUTLINED

Two physicians and the American Medical Association's council on foods and nutrition recently warned against the indiscriminate use of new low-protein diets.

They pointed out serious hazards which they said have not been made clear in nonmedical publicity about the so-called "Rockefeller" or "fabulous formula" diets.

Dr. Norman Jolliffe, director of the New York City department of health's bureau of nutrition, questioned the safety and effectiveness of the diets, while the A.M.A. council and Dr. Vincent P. Dole, New York, urged that persons use the diets only if they are under strict medical supervision. Their statements appear in the Aug. 25 Journal of the A.M.A.

All three reports agreed that the diets would be dangerously low in protein content if not used exactly as prescribed and after a doctor's investigation of the individual's condition. Dr. Jolliffe, in fact, said the diets even "as is" are below minimum standards for maintaining body structure and function.

In addition to these warnings, Dr. Dole added a note of discouragement: even the patients on whom the original diets were tested successfully regained weight when they quit the diets.

The diets differ from both of the most com-

mon methods—those which call for low-calorie diets balanced in nutrition, and those requiring drastic cuts in fats, sugars, and starches and increases in proteins. Based on experimental diets developed by Dr. Dole and his colleagues at the Rockefeller Institute of Medical Research, both diets call for lowered protein intake.

VIRUS RECOVERED IN CASE OF JAPANESE B ENCEPHALITIS

The virus which causes Japanese B encephalitis has been found for what is probably the first time in a case of the disease brought back to this country from the Far East.

Doctors making the finding said it points up earlier warnings about the possibility of introducing the virus into the U. S. where conditions could allow its spread. The disease, an inflammation of the brain, is related to "sleeping sickness" and polio.

The virus was isolated from the tissue of an American soldier just returned from Korea, according to Lt. Col. Harold E. Shuey (MC) and Lt. Col. Trygve O. Berge (MSC) from the Sixth Army medical laboratory, Fort Baker, Calif. They made their report in the Oct. 6 1956 Journal of the American Medical Association.

Only three other cases of the disease occurring in persons while enroute or after arrival here from the Far East have been reported, and as far as the Army physicians know, no virus was found in those three.

They said the virus could become well established if brought into the western U. S., where other viruses causing other types of encephalitis are prevalent.

Earlier researchers have shown that seven species of mosquitoes in the western U. S. can transmit mouse-brain-adapted strains of the Japanese B encephalitis virus to mice in the laboratory. This means that the disease possibly could be spread in the U. S. if a person infected with the disease (and carrying the virus in his blood) were bitten by one of these mosquitoes.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

ORLEANS PARISH

Members of the Woman's Auxiliary to the Orleans Parish Medical Society were hostesses at the twentieth annual meeting of The New Orleans Graduate Medical Assembly held March 11-14 at the Municipal Auditorium.

These members staffed the registration desk located in the Main Lobby of the Roosevelt Hotel, and registered the wives of the doctors attending the Assembly meeting; 207 visiting ladies were present. An information center manned also by members, supplied news concerning entertainment, etc.

The scheduled entertainment included: The mornings of March 12 (rained out) and March 13, golf tournament at the Metairie Country Club. Tuesday afternoon there was a tour of the Vieux Carre, with special guides, and Wednesday afternoon A Tea and Fashion Show was held at the Orleans Club. Goldring's had a showing of beautiful spring and summer wardrobes and Coleman E. Adler and Sons, Inc. had a fabulous display of precious jewels.

Receiving at the tea with Mrs. Abe Golden, President of the Woman's Auxiliary to the Orleans Parish Medical Society were Mrs. Jules

Myron Davidson, General Chairman of the Ladies' Registration and Entertainment for the Assembly, Mrs. W. A. K. Seale, President of the Woman's Auxiliary to the Louisiana State Medical Society, Mrs. Eugene Countiss, wife of the President of The New Orleans Graduate Medical Assembly, Mrs. Charles Lafayette Brown, wife of the President-elect of the New Orleans Graduate Medical Assembly, and Mrs. George H. Hauser, wife of the President of the Orleans Parish Medical Society. These ladies formed the Honorary Committee. Alternating and presiding at the tea and coffee tables were the wives of the Past Presidents of the Assembly: Mmes. Thomas B. Sellers, Frederick L. Fenno, John M. Musser, Val H. Fuchs, Charles A. Bahn, H. Theodore Simon, L. C. Chamberlain, William H. Gillelentine, Joseph S. D'Antoni, Curtis Tyrone, Edwin H. Lawson, Edgar Hull, Charles B. Odom, Andrew V. Friedrichs, and Donovan C. Browne. The tea girls were Mrs. Abram Oscar Goldsmith, chairman, and Mmes. Jason Collins, Charles Lafayette Brown, Jr., Horace B. Chalmstrom, James C. Burns, George T. Schneider, Robert P. Morrow, Jr., Aynaud M. Hebert, Irving Levin, J. Browne Larose, Jr., Charles Farris, Jr., Henry K. Threefoot, Joseph A. Diaz, Fred Brumfield, Richard Vincent, W. H. Harris, Jr., Philip J. Krupp, Jr., Blaise Salatic, Bernard Jacobs, George J. Fruthaler, Jr., J. William Rosenthal, Kenneth Cox, O'Neil L. Pollingue, Morris Klinger, and T. C. Sherwood.

Thursday, March 14 there was a morning and afternoon Harbor Tour on the "Good Neighbor", compliments of the Board of Commissioners of the Port of New Orleans. There was such an overwhelming response to this, two more tours could have been filled.

Besides the Honorary Committee and Tea Girl Chairman mentioned above, Mrs. Davidson had also appointed the following: Registration—Mmes William J. Rein, Edwin H. Lawson, Ruble Moor and J. O. Weilbaeher. Information—Mmes. H. Ashton Thomas, Robert E. Rougelot, Jr., C. Grenes Cole, and Hyder F. Brewster. Transportation—Mmes. Felix A. Planche, Cuthbert J. Brown, J. Theo Brierre, and Mannie Mal-lowitz. Publicity—Mmes. Robert C. Kelleher, George M. Haik, Benjamin O. Morrison, and L. Sidney Charbonnet. Honored Guests—Mmes.

Eugene H. Countiss and Joseph S. D'Antoni. N. O. Harbor Tour—Mmes. Edwin R. Guidry, James H. Allen, Spencer McNair, and Willard Wirth. French Quarter Tour—Mmes. Boni J. DeLaurel and Aynaud F. Hebert. Golf—Mmes. Edwin L. Zander, Charles B. Odom, Percy Philips, and George T. Schneider, Jr. Fashion Show—Mmes. Jules Myron Davidson, Abe Golden, Alton Ochsner, and Albert Habeeb. Tea—Mmes. Charles Lafayette Brown, Francis E. LeJeune, Donovan C. Browne, and Gordon Johnson. Flowers—Mrs. Esmond Fatter.

This was a banner year. The attendance at all events was most gratifying—the tea and floral arrangements never lovelier. A most enjoyable time was had by all, and the ladies of the Auxiliary are already looking forward to next year's assembly when old friendships may be renewed and new ones made.

THIRTY-FOURTH ANNUAL MEETING OF WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

Headquarters for the Auxiliary's meeting will be the Hotel Roosevelt, New York City, June 3-7, 1957. Registration will open June 2. There will be round table discussions of interest and educational value to all physicians' wives June 3 and June 5. Members and guests are invited. The general meeting will be held June 5, 6, and 7, until noon, and a Board of Director's meeting at 1:00 o'clock on June 7. There will be a Post-Convention Workshop for State Presidents, Presidents-Elect, and National Committee Chairmen on Friday, June 7.

Social activities include: June 3, a tea, honoring President and President-Elect. June 4, luncheon in honor of the National Past Presidents, at which Dr. Howard Rusk, Director of the Institute of Physical Medicine and Rehabilitation of the N. Y. U. Bellevue Medical Center, will be guest speaker. June 5, Luncheon in honor of the National President and President-Elect, at which Dr. Dwight H. Murray, President of the AMA, will be the guest speaker. June 6, annual dinner for Auxiliary members, husbands, and guests, at which the guest speaker will be Professor Allen Richard Foley of Dartmouth College.

BOOK REVIEWS

Applied Medical Bibliography for Students; by William Dosite Postell. Springfield, Ill. Charles C Thomas, 1955. pp. 142. Price \$4.50.

Publication in the field of medicine is today so extensive that to gain familiarity with the literature the physician must also have access to and familiarity with the indexes to it. Further-

more, he must know how to use libraries, and to use libraries with facility one must have some knowledge of how these storehouses of medical knowledge are organized. Instruction in the use of medical libraries and the indexes to medical literature is today increasingly recognized as a basic part of medical education. Mr. Postell's

new book is written as an aid in teaching medical students how to use the medical library and to instruct him in the principles of medical bibliography. It is the only book available on this subject.

The purpose of the volume as stated by the author is to give students (1) a better understanding of the arrangement and organization of the library, (2) a working knowledge of the principal reference works and indexes, and (3) an appreciation of bibliographic methods, including historical bibliography, modern bibliography, and methods of bibliography.

The book will fill a long standing need for the use not only of the medical student, but also of the physician unfamiliar with the keys to medical literature.

MARY LOUISE MARSHALL

Dictionary of Poisons; by Ibert Mellan and Eleanor Mellan, New York Philosophical Library, 1956, Pp. 150, Price \$4.75.

Of 34,000 Americans who are killed in the home each year, poisoning ranks third as a cause of death, and a third of these occur in children under five years of age. In addition to accidental deaths from poisoning, the use of toxic agents in suicide lends importance to necessity for first aid care in these cases.

This small and inexpensive volume will prove a useful tool in the physician's office or in the home. The book opens with methods for preparing the various types of emetics, demulcents and cathartics. This is followed by simple directions as to what to do for burns and gas poisoning.

After this introductory material an alphabetized discussion is presented of the common agents of poisoning from acetanilide to zinc phosphide. Possible cause of poisoning, symptoms, antidote and first aid are noted, followed in most cases by the note "Call a Physician Immediately." The volume is offered as a supplement rather than as a substitute for medical care.

MARY LOUISE MARSHALL

Bickham - Callander Surgery of the Alimentary Tract; by Richard T. Schackelford, Philadelphia, Pa., W. B. Saunders Company, 1955, 3 vols., Price \$60.00.

This is a gigantic compilation of surgical techniques of the alimentary tract. A work so nearly a complete compendium must be the result of tremendous preparation and research and there has been a need for such a revision for a long time.

Residents in surgery will find it difficult to locate a set of books comparable to these as a refresher course. The novice in surgery will find a wealth of technical information with a minimum expenditure of time. The busy surgeon will find them a handy reference and refresher on procedures. These volumes are well illustrated and the descriptive matter is not detailed to the

extent that it becomes boring. No little point should be made of the fact that the descriptive matter is on the same page as the illustration. I do not feel that these volumes are to be recommended for student use because of the lack of detail.

This work is easy to read and I have reviewed it with great pleasure. The author has definitely avoided the use of unnecessary words and his descriptions are crisp. He does, however, give his own choice of procedures, which may or may not be to your liking.

VINCENTE D'INGIANNI, M. D.

Subacute Bacterial Endocarditis; by Andrew W. Kerr, Jr., M. D., Springfield, Illinois, Charles C Thomas, 1955, Pp. 343, Price \$6.50.

This is a 265 page monograph, exclusive of the bibliography of 800 references, on a disease of continuing importance and interest. As far as the reviewer is aware, it is the most comprehensive treatise dealing with this subject since the advent of the antibiotic era. There is an interesting historical section, followed by nine chapters covering thoroughly its various clinical aspects. Notable are the clear descriptions of the development of knowledge concerning classical signs such as the Osler node and the Janeway lesion. Following this there is a full discussion of pathogenesis and in the final four chapters, an excellent summary of the present status of antibiotic therapy.

There is little of significance to the clinician concerning subacute bacterial endocarditis which has not received consideration. It should prove a valuable reference work and a useful guide to the vast literature on this disease for some time to come.

E. B. FERGUSON, JR., M. D.

PUBLICATIONS RECEIVED

Doubleday & Co., Inc., N. Y.: *Battle for the Mind*, by William Sargent.

Grune & Stratton, N. Y.: *Ultramicro Methods for Clinical Laboratories*, by Edwin M. Knights, Jr., M. D., Roderick F. MacDonald, Ph. D., and Jaan Ploompuu.

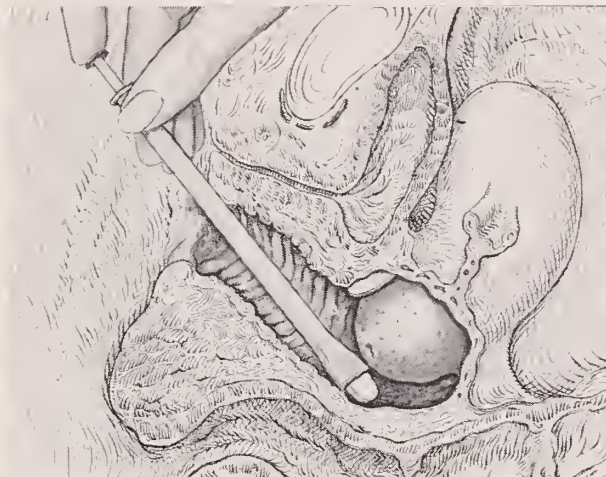
Paul B. Hoeber, Inc., N. Y.: *The Clinical Management of Varicose Veins*, by David Woolfolk Borrow, M. D. (2nd edit.); *Coronary Heart Disease*, by Milton Plotz, M. D.

Lange Medical Publications, Los Altos, Calif.: *General Urology*, by Donald R. Smith, M. D.

The C. V. Mosby Co., St. Louis: *Clinical Laboratory Methods*, by W. E. Bray, M. D. (5th edit.).

Philosophical Library, N. Y.: *The Care of the Expectant Mother*, by Josephine Barnes, D. M., F. R. C. S. (Eng.).

W. B. Saunders Co., Phila.: *Current Therapy 1957, Latest Approved Methods of Treatment for the Practicing Physician*, edited by Howard F. Conn, M. D.

COMPREHENSIVE VAGINITIS REGIMEN*Powder Insufflation**Tablet Insertion*

Floraquin® Rebuilds the Defense Mechanism in Vaginitis

Combined office and home treatment with Floraquin provides a comprehensive regimen which encourages restoration of the normal "acid barrier" to pathogenic infection.

Vaginal secretions normally show a high degree of protective acidity (pH 3.8 to 4.4). When this "acid barrier" is disturbed, growth of benign Döderlein bacilli is inhibited and that of pathogens encouraged. Floraquin not only provides an effective protozoacide and fungicide (Diodoquin®) destructive to pathogenic trichomonads and yeast, but also furnishes sugar and boric acid for reestablishment of the normal vaginal acidity and regrowth of the normal protective flora.

Suggested Office Floraquin Insufflation

"... the vagina is treated daily by swabbing with green soap and water, drying and insufflation of Floraquin powder."*


Suggested Home Floraquin Treatment

"The patient is also issued a prescription for Floraquin vaginal suppositories which she is instructed to insert high into the vagina each evening. On the morning following each application of these suppositories, the patient should take a vinegar water douche. . . ."

A Floraquin applicator is supplied with each box of 50 Floraquin tablets. G.D. Searle & Co., Chicago 80, Illinois, Research in the Service of Medicine.

*Williamson, P.: Trichomonad Infestation, M. Times 84:929 (Sept.) 1956.

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KYNEX is an entirely new, readily soluble, single sulfonamide exhibiting excellent antibacterial action at radically reduced dosage.

KYNEX offers desirable clinical advantages hitherto not obtained by any related drug—

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HIGH SOLUBILITY: prompt absorption, adequate diffusion into body fluid and tissue.

PROLONGED ACTION: therapeutic blood levels within the hour, blood concentration peaks within 2 hours—5-10 mg. per cent blood levels persist 24 hours after single oral dose of 1 Gm.



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BROAD-RANGE EFFECTIVENESS: KYNEX is particularly efficient in urinary tract infections due to sulfonamide-sensitive organisms, including *E. coli*, *Aerobacter aerogenes*, paracolon bacilli, streptococci, staphylococci, Gram-negative rods, diphtheroids and Gram-positive cocci.

SAFETY: KYNEX offers a margin of clinical safety based on low required dosage, solubility, slow excretion rate. Although KYNEX Sulfamethoxypyridazine is a sulfonamide derivative and the usual precautions regarding such drugs should be observed, the low daily dose of 1.0 Gm. is all that is required for the therapeutic blood levels. No increase in dosage is recommended.

CONVENIENCE: The low dose of 1 Gm. (2 tablets) per day offers optimal convenience and acceptance to patients.

EACH TABLET CONTAINS: sulfamethoxypyridazine . . . 0.5 Gm. (7½ grains). **AVAILABLE:** Bottles of 24 and 100 Tablets.



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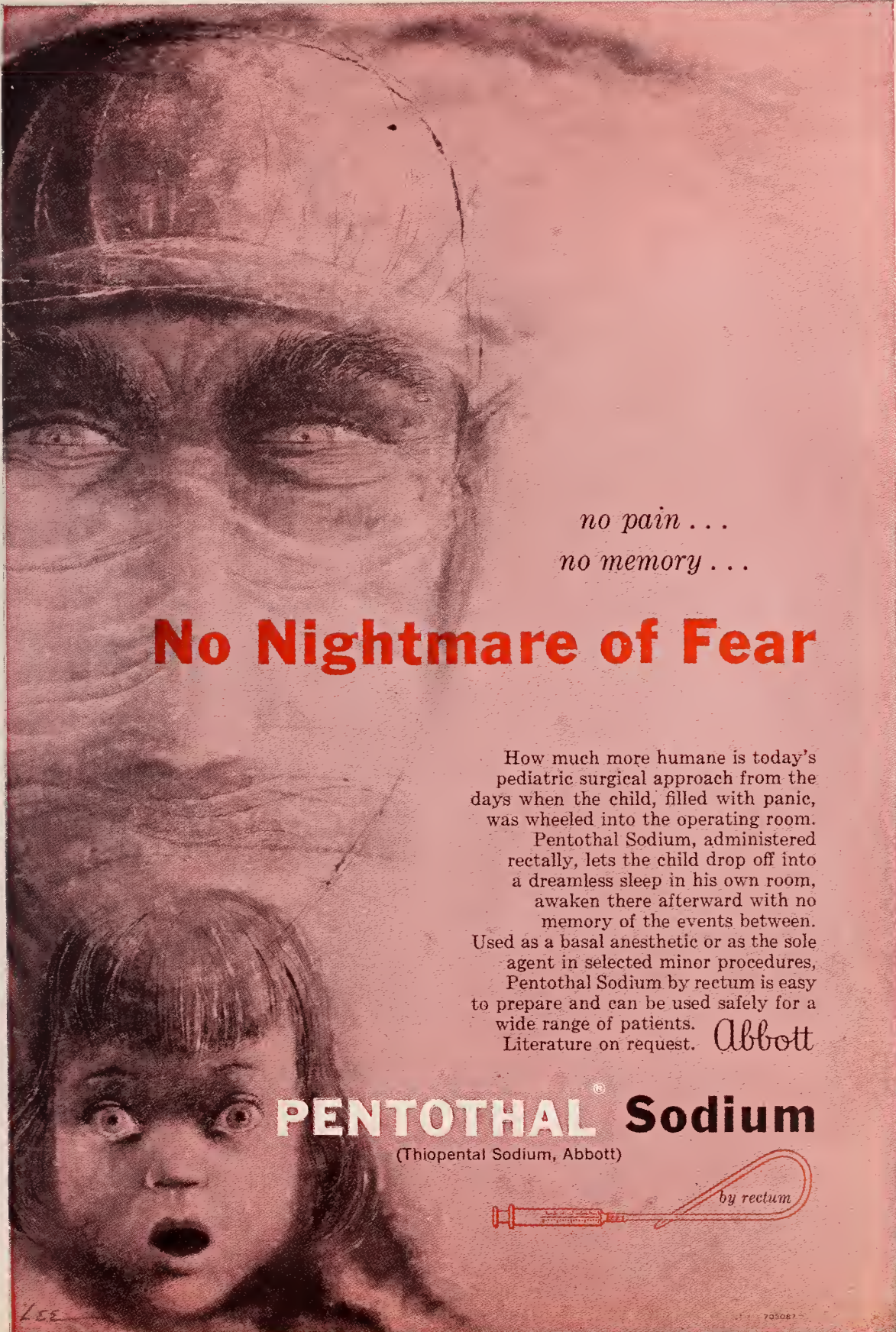
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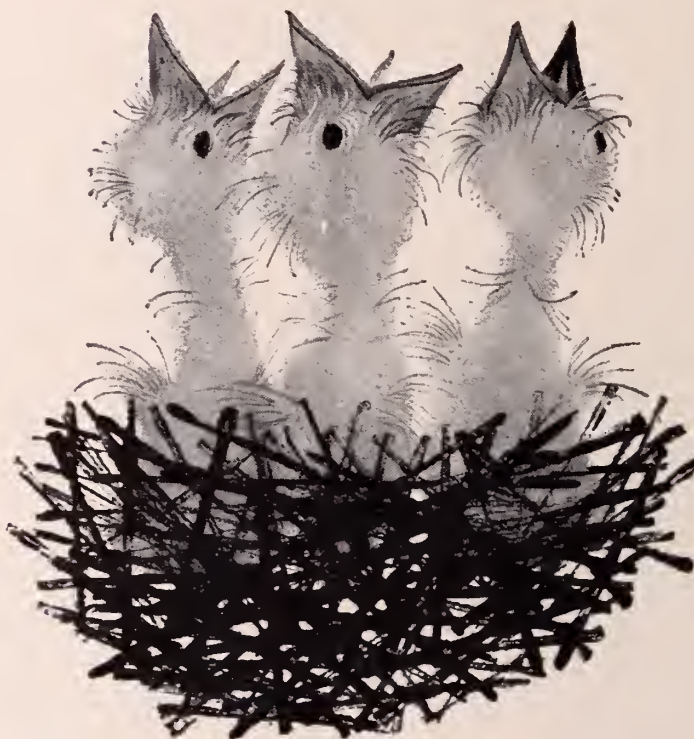
Pentothal Sodium by rectum is easy to prepare and can be used safely for a wide range of patients.

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Dosage: 1 or 2 teaspoonfuls t.i.d.

Supply: Bottles of 8 ounces and 1 pint.

1 teaspoonful (5 cc.) supplies:

Elemental Iron	38 mg.
(as ferric ammonium citrate and colloidal iron)	
Vitamin B ₁₂ activity concentrate	4 mcg.
Thiamine mononitrate	1.0 mg.
Riboflavin	1.0 mg.
Niacinamide	5 mg.
Pantothenic acid (Panthenol)	1.5 mg.
Pyridoxine hydrochloride	0.5 mg.

Alcohol content: 12 per cent

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(Prednisolone tertiary-butylacetate, Merck)

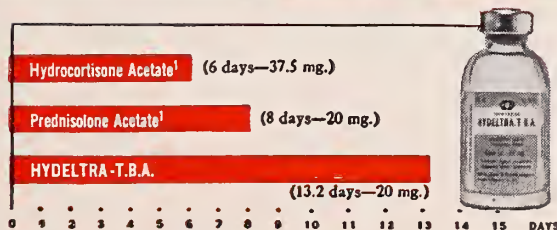
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allows early
ambulation—
relieves pain
and swelling



Rheumatoid arthritis
Osteoarthritis
Acute gouty arthritis
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Sprains
Tendinitis
Trigger finger
Peritendinitis
Trigger points
Tennis elbow
Lumbosacral strain
Capsulitis
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Duration of relief
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can you read this thermometer,



doctor?

Naturally not. Missing calibration makes it worthless.

Equally useless and dangerous is a "quantitative" urine-sugar test that does not quantitate dependably, or omits readings in the critical range.

Enzyme urine-sugar tests are sensitive and specific for glucose—excellent "yes" or "no" tests but undependable for quantitation. King and Hainline,¹ after testing 1,000 urines, found an enzymatic urine-sugar test unable to distinguish in the important range between $\frac{1}{2}$ per cent and 2 per cent or more of urinary glucose. Leonards,² in a report on 4,020 tests, revealed that "...in 502 out of 804 tests the wrong interpretation was made." He concluded that enzymatic urine-sugar testing "...as a quantitative procedure is unsatisfactory and can lead to serious error in the interpretation of a patient's clinical condition."²

Failure to recognize this limitation of enzyme tests may result in incorrect insulin dosage,² and may lead to diabetic complications.

(1) King, J. W., and Hainline, A., Jr.: Commercial Glucose Oxidase Preparations for the Detection of Glucose in Urine, *Cleveland Clin. Quart.* 23:212, 1956. (2) Leonards, J. R.: Evaluation of Enzyme Tests for Urinary Glucose, *J.A.M.A.* 163:260 (Jan. 26) 1957.

reliable readings throughout the critical range—
does not omit $\frac{3}{4}\%$ (++) and 1% (+++)

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CLINITEST[®]
BRAND

a 15 year "standard" in urine-sugar testing



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Salcolan

SAFE

for

**BURNS
SCALDS
ABRASIONS**

- ★ "Initial rapid pain relief, early tissue re-growth, control of secondary infection."
- ★ "A marked reduction in total healing time."
- ★ Clinical reports, samples, and descriptive brochure may be had on request. Please write us on your letterhead.



RICH SALCOLAN IS AVAILABLE IN LIQUID OR OINTMENT, AND IS A PRODUCT OF
RICH COMPANY, INC., 3518 Polk Avenue, Houston 3, Texas



Wonderfully Simple...

Simply Wonderful!

Baker's Modified Milk is a complete infant food, easy to prescribe and prepare in hospital and home.

Available in liquid and powder forms, both are made *exclusively* from Grade A Milk (U.S.P.H.S. Milk Code). Both contain all requirements for *complete* infant nutrition.

Baker's Liquid — generally preferred for its greater ease of preparation.

Baker's Powder — particularly adaptable for feeding prematures and for use as complemental and supplemental feedings.

Both forms are extremely low in price, costing less than a penny per ounce of formula.

Furnished to hospitals without charge, of course.

Feeding Directions

BAKER'S MODIFIED MILK (Liquid)

NEWBORN INFANTS (Hospital)—1 part Baker's to 2 parts cool water.

FIRST WEEK AT HOME — 1 part Baker's to 1½ parts cool water.

AFTER FIRST WEEK AT HOME — 1 part Baker's to 1 part cool water.



Liquid

Powder

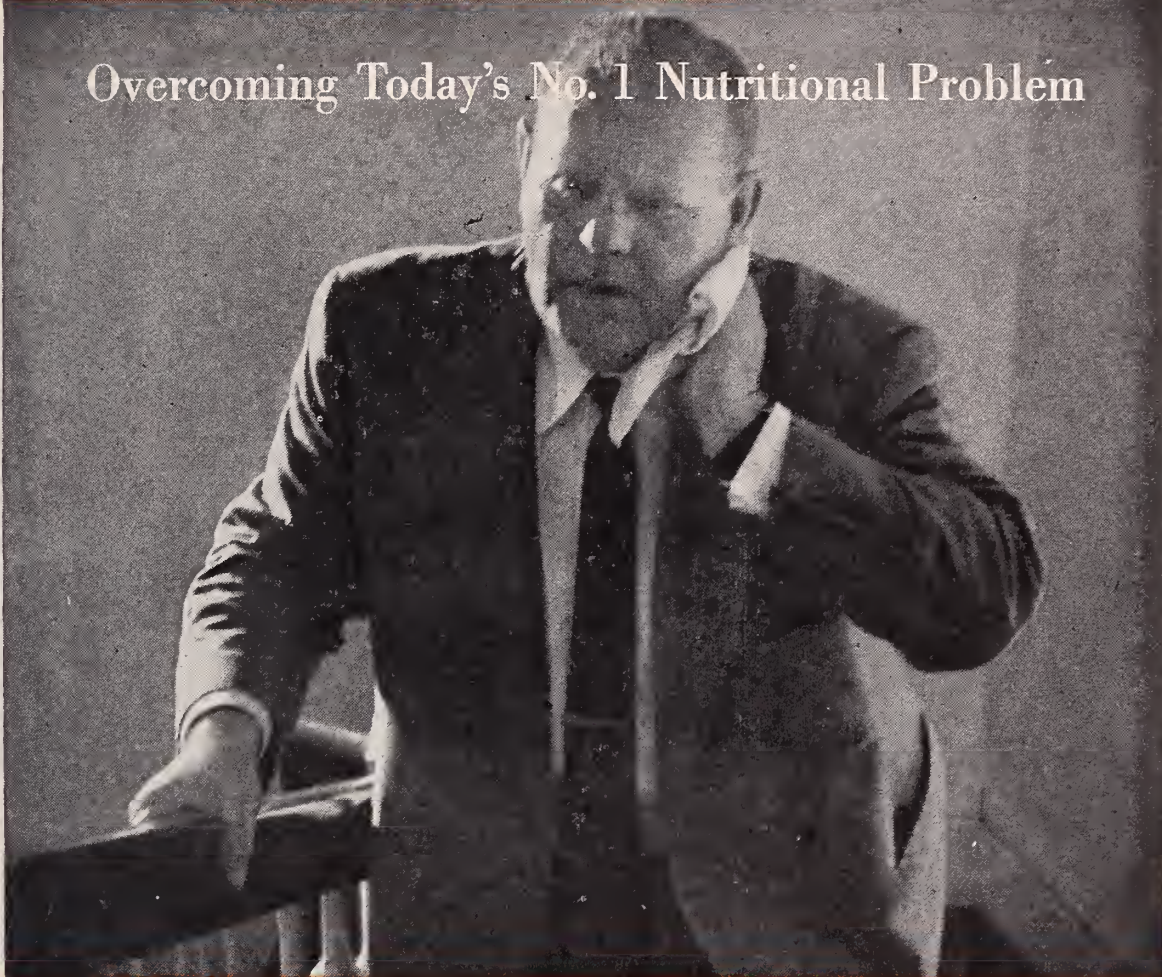
BAKER'S MODIFIED MILK
THE BAKER LABORATORIES, INC.

Milk Products Exclusively for the Medical Profession

Main Office: Cleveland 3, Ohio • Plant: East Troy, Wisconsin

KNOX PROTEIN PREVIEWS

Overcoming Today's No. 1 Nutritional Problem



Knox "Choice of Foods" Diet Can Help Your CARDIAC Patients Lose Weight Successfully



1. Color-coded diets of 1200, 1600 and 1800 calories are based on nutritionally-sound Food Exchanges.¹

2. Easy-to-use Food Exchanges (referred to in the Knox booklet as Choices) eliminate calorie counting by patient.

3. Diets promote accurate adjustment of caloric levels to the special needs of the patient yet allow each individual considerable latitude in the choice of foods.

4. More than six dozen appetizing, low-calorie recipes are presented on the last 14 pages of each diet booklet.

1. The Food Exchange Lists referred to are based on material in "Meal Planning with Exchange Lists" prepared by Committees of the American Diabetes Association, Inc., and The American Dietetic Association in cooperation with the Chronic Disease Program, Public Health Service, Department of Health, Education and Welfare.

Chas. B. Knox Gelatine Co., Inc.
Professional Service Dept. SJ-24
Johnstown, N. Y.



Please send me dozen copies of the new illustrated Knox Reducing booklet based on Food Exchanges.

Your Name and Address

NEW...

RELIEVES ANXIETY AND TENSION

RELIEVES JOINT INFLAMMATION

RELIEVES DISCOMFORT AND DISABILITY

RELIEVES MUSCLE SPASM

'ME

Each Multiple Compressed Tablet of MEPROLONE provides the inseparable antiarthritic, antirheumatic benefits of:

1. *Prednisolone buffered*—the newest and most potent of the “predni-steroids” for prompt relief of joint pain and arrest of the destructive inflammatory process.

2. *Meprobamate*—the newest and safest of the muscle-relaxant tranquilizers for profound relaxation of skeletal muscle in spasm.

Tolerance to this combination is good because there is little likelihood of sodium retention, potassium depletion or gastric distress with buffered prednisolone, and meprobamate rarely produces significant side effects in therapeutic dosage.

An additional important therapeutic benefit, often overlooked, stems from the tranquilizing action of meprobamate. This component of MEPROLONE relieves mental tension and anxiety so often manifest in arthritics, making them more amenable to other rehabilitation measures.

INDICATIONS: A wide variety of conditions, in which four symptoms predominate: *a)* inflammation *b)* muscle spasm *c)* anxiety and tension *d)* discomfort and disability; i.e., rheumatoid arthritis, rheumatoid spondylitis (Marie-Strümpell disease), Still's disease, psoriatic arthritis, osteo-

Therapeutic benefits of MEPROLONE compared with traditional antiarthritics

	relieves pain	suppresses inflammation	relaxes muscle	eases anxiety	improves joint function
Salicylates	✓	✓			
Muscle relaxants			✓ ¹		
Tranquilizers				✓ ¹	
Steroids	✓	✓			✓
MEPROLONE	✓	✓	✓	✓	✓

¹ Meprobamate is the only tranquilizer with muscle-relaxant action.

arthritis, bursitis, synovitis, tenosynovitis, myositis, fibrositis, fibromyositis, neuritis, acute and chronic low back pain, acute and chronic primary and secondary fibrositis and torticollis, intractable asthma, respiratory allergy, allergic and inflammatory eye and skin disorders (as maintenance therapy in disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis and scleroderma).

SUPPLIED: Multiple Compressed Tablets in bottles of 100 in two formulas as follows: MEPROLONE-1—1.0 mg. of prednisolone, 200 mg. of meprobamate and 200 mg. of dried aluminum hydroxide gel. MEPROLONE-2—2.0 mg. of prednisolone in the same formula.

NO OTHER
ANTIRHEUMATIC
PRODUCT
PROVIDES AS MANY
BENEFITS AS

MEPROLONE[®]

MEPRO | BAMATE
PREDNISO | LONE, *buffered*

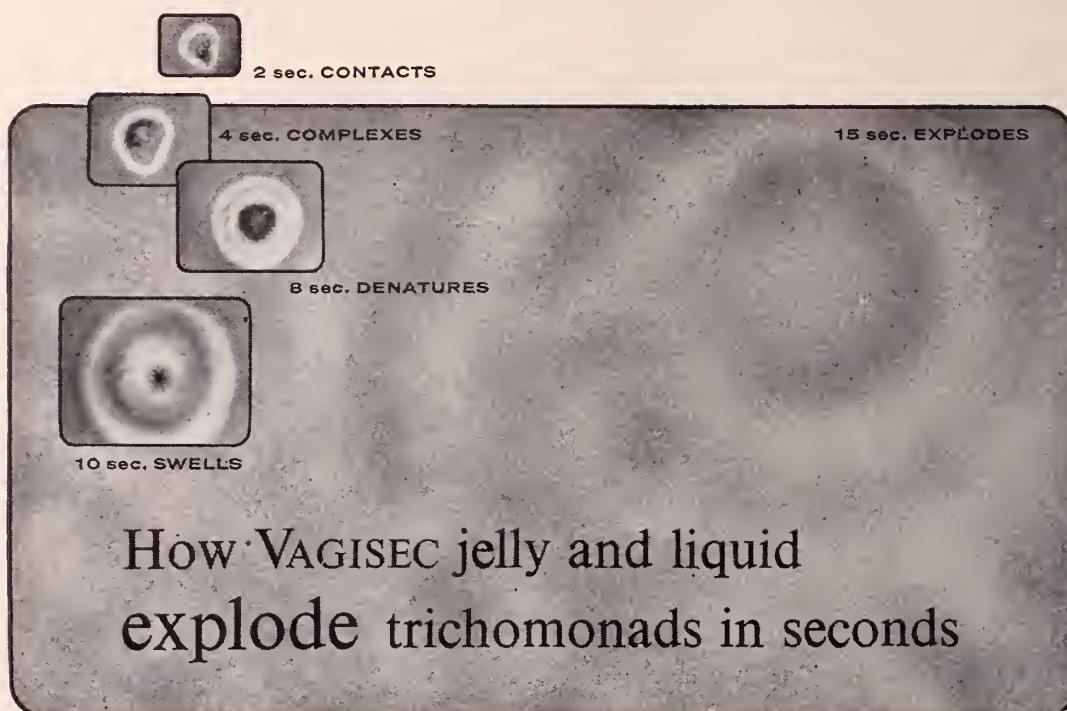
THE ONLY
ANTIRHEUMATIC,
ANTIARTHRITIC
THAT SIMULTANEOUSLY
RELIEVES:

1. MUSCLE SPASM
2. JOINT INFLAMMATION
3. ANXIETY AND TENSION
4. DISCOMFORT
AND DISABILITY



MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC. PHILADELPHIA 1, PA.

MEPROLONE is the trade-mark of Merck & Co., Inc.



VAGINAL trichomoniasis quickly yields to VAGISEC® liquid and jelly.¹⁻⁵ These unique trichomonacides *explode* flagellates after 15 seconds' contact. Following a VAGISEC douche, VAGISEC jelly maintains trichomonacidal effectiveness 'round-the-clock. With this new approach, therapy succeeds in more than 90 per cent of cases.⁴

Research proves effectiveness—In hundreds of tests with slide preparations, mixtures of VAGISEC jelly and vigorous cultures of *Trichomonas vaginalis* have been examined under a phase-contrast microscope.^{3,6} The trichomonads *explode* and *disperse* within 15 seconds after contact with jelly—exactly like those in a VAGISEC douche solution.³⁻⁶

Explosion succeeds—VAGISEC liquid and jelly penetrate rapidly to trichomonads covered by vaginal mucus and cellular debris and *explode* them, avoiding post-treatment flare-ups.³⁻⁵ VAGISEC therapy often rids stubborn clinical cases of "trich" even after other agents fail.

Why parasites explode—A wetting agent, a detergent and a chelating agent, combined in balanced blend in VAGISEC liquid and jelly,³⁻⁵ act to weaken the parasites' cell membranes, remove waxes and lipids, and denature the protein. Then the trichomonads imbibe water, swell and explode into fragments . . . all within 15 seconds.

The Davis technique†—Dr. Carl Henry Davis, co-discoverer of VAGISEC, recommends a combination of office treatments with VAGISEC

liquid and 'round-the-clock home therapy with the liquid and jelly.³ This regimen halts vaginal trichomonal infections and ensures *continuous* control until all trichomonads are gone. For a small percentage of women who have an involvement of cervical, vestibular or urethral glands, other treatment will be required.^{1,3-5}

Re-infections can and do occur from the husband^{2-5,7,8}—Prescribing RAMSES®, high quality prophylactics, as protection against conjugal contagion ensures husband cooperation. Most of them know and prefer RAMSES—the one with "built-in" sensitivity. RAMSES are superior, transparent rubber prophylactics, naturally smooth, very thin, yet strong. At all pharmacies.

Active ingredients in VAGISEC liquid: Polyoxyethylene nonyl phenol, Sodium ethylene diamine tetra-acetate, Sodium dioctyl sulfosuccinate. In addition, VAGISEC jelly contains Boric acid, Alcohol 5% by weight.

References: 1. Decker, A., and Decker, W. H.: Practical Office Gynecology, Philadelphia, F. A. Davis Company, 1956. 2. McGoogan, L. S.: J. Michigan M. Soc. 55:682 (June) 1956. 3. Davis, C. H. (Ed.): Gynecology and Obstetrics (revision), Hagerstown, W. F. Prior, 1955, vol. 3, chap. 7, pp. 23-33. 4. Davis, C. H.: West. J. Surg. 63:53 (Feb.) 1955. 5. Davis, C. H.: J.A.M.A. 157:126 (Jan. 8) 1955. 6. Molomut, N., Port Washington, N. Y.: Personal communication (Jan.) 1957. 7. Draper, J. W.: Internat. Rec. Med. 168:563 (Sept.) 1955. 8. Feo, L. G., et al.: J. Urol. 75:711 (Apr.) 1956.

JULIUS SCHMID, INC.

gynecological division

423 West 55th Street, New York 19, N. Y.

VAGISEC and RAMSES are registered trade-marks of Julius Schmid, Inc.
†Pat. app. for

symptomatic relief... plus!

ACHROCIDIN*

TETRACYCLINE-ANTIHISTAMINE-ANALGESIC COMPOUND

tablets and syrup

ACHROCIDIN provides early effective therapy for undifferentiated upper respiratory infections, especially in the very young and very aged; nephritics; susceptibles to recurrent middle ear and sinus infections; those with diabetes, chronic pulmonary diseases, bronchial asthma of the infectious type, rheumatoid or rheumatic disorders.

In addition to *rapid symptomatic improvement*, ACHROCIDIN offers *prompt, potent control of the bacterial component* frequently responsible for complications leading to prolonged disability in susceptible individuals.

Adult dosage for ACHROCIDIN Tablets and new, caffeine-free ACHROCIDIN Syrup is two tablets or teaspoonfuls of syrup three or four times daily. Dosage for children according to weight and age.

Available on prescription only

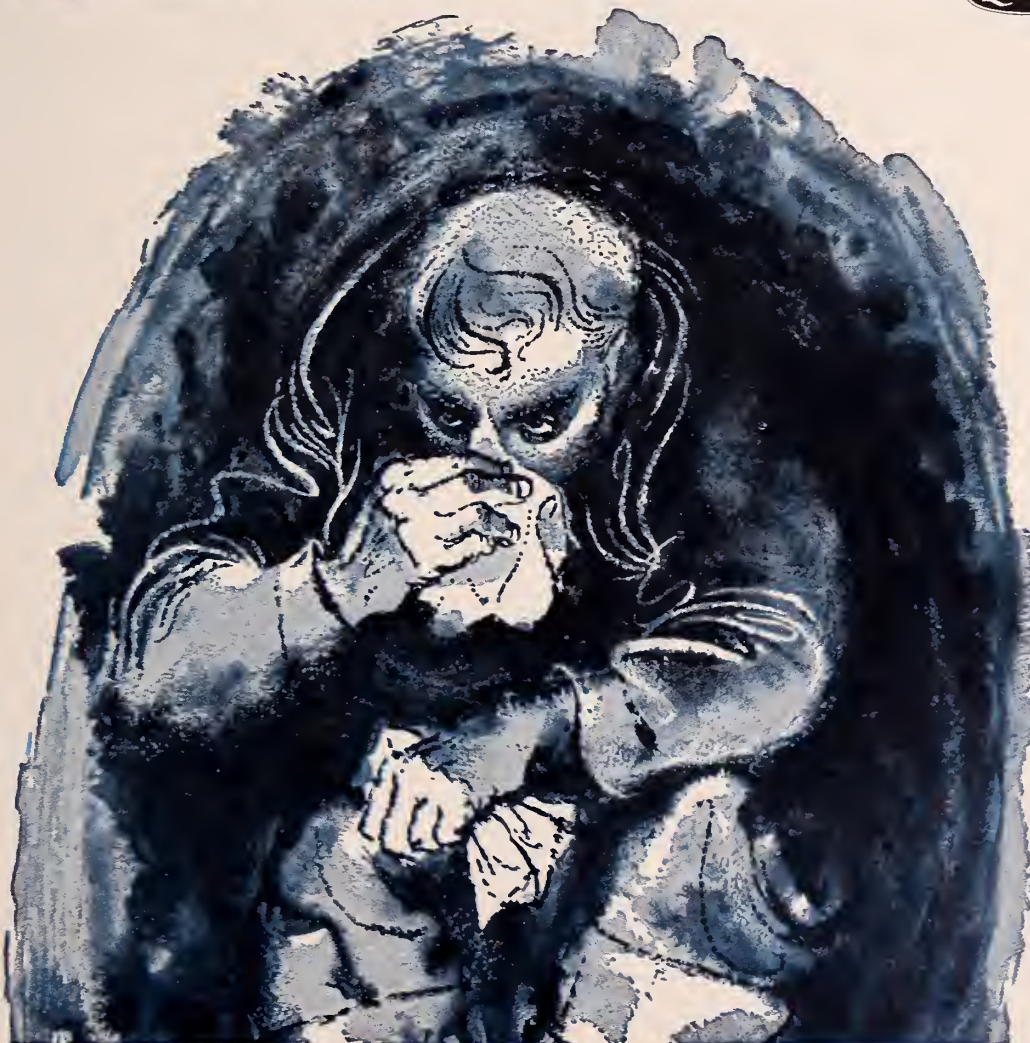
Each tablet contains:

ACHROMYCIN® Tetracycline
Phenacetin
Caffeine
Salicylamide
Chlorothen Citrate

*Trademark

125 mg.
120 mg.
30 mg.
150 mg.
25 mg.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK



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THE LAW OF AVERAGES

Every man and woman is a "statistic."

Each makes a personal contribution to the Law of Averages. In a matter over which they have little or no control, the contribution of some is plus, the contribution of others, minus. Only rarely is the contribution exactly average.

This fact is important to the professional man or woman buying life insurance or a retirement plan. Each person wishes to be sure his or her money is properly spent in purchasing "coverage" in the event of death. Each—planning his or her own economics—would like the availability of cash at a certain advanced point in life or career.

How to plan? Who knows how long he or she will live—despite the Law of Averages?

Tidelands Life has taken the guesswork out of such important planning. Illustrating Tideland's New Insured Plan for Retirement with a \$10,000.00 policy, this is what it guarantees to do for you if you participate:

IF YOU DIE

Any time after this policy is issued, Tidelands Insurance Company will pay to your beneficiary \$10,000.00 cash—and—will return to your beneficiary all the premiums you have paid to the Company.

IF YOU LIVE

Tidelands Life will pay you, at age 65, \$10,000.00 cash—and—return to you all the premiums you have paid to the Company.

Tidelands Life Insurance Company, a company whose record of over seventeen million dollars in life insurance sales in eight months has placed it among the important financial institutions of the State of Louisiana, is pleased to be able to offer this unique plan to professional men and women.

This Plan is available for a limited time only. Fill-in and mail the coupon to Tidelands Life today.

Mail to:

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Professional Department
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Please send me the details concerning the special Insured Plan for Retirement for professional persons.

NAME (Please print): _____

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CITY: _____

DATE OF BIRTH: (Mo.) _____ (Day) _____ (Year) _____

If you could



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with a user of the Picker Anatomic Century x-ray unit you'd soon know why this remarkable "new way in x-ray" machine has come so far so fast.



He'd probably tell you first how incredibly easy it is to use (just dial the body part and set its thickness... then press the button). He might sigh with relief at having no charts to consult, no calculations to make (the anatomic principle does all the tedious "figgerin" for you).



He'd probably show you how good a radiograph he gets every time



He might even touch on the peace-of-mind that comes of having a local Picker office so near, with a trained Picker expert always on call for help and counsel



and there'd be no mistaking the light in his eye when it falls on the handsome big-name unit whose fine appearance adds so much to the impressiveness of his office.

P.S. Somewhere along the line the matter of price would come up ... he'd most likely comment on how little he paid to get so much. Or he might even be among those who rent their x-ray machine (Picker has an attractive rental plan, you know).

P.P.S. Next best thing is to call your local Picker man in and let him tell you about this great new machine (find him in your 'phone book) or write Picker X-Ray Corporation, 25 South Broadway, White Plains, N. Y.

Picker office for **LOUISIANA** and Mississippi is 1220 St. Charles Avenue, New Orleans 13, La.
Alexandria, La., 3020 Dennis Street

Jackson, Miss., 2364 Payden Street

among nonhormonal antiarthritics...

unexcelled in
therapeutic potency

BUTAZOLIDIN[®]

(phenylbutazone GEIGY)

In the nonhormonal treatment of arthritis and allied disorders no agent surpasses BUTAZOLIDIN in potency of action.

Its well-established advantages include remarkably prompt action, broad scope of usefulness, and no tendency to development of drug tolerance. Being nonhormonal, BUTAZOLIDIN causes no upset of normal endocrine balance.

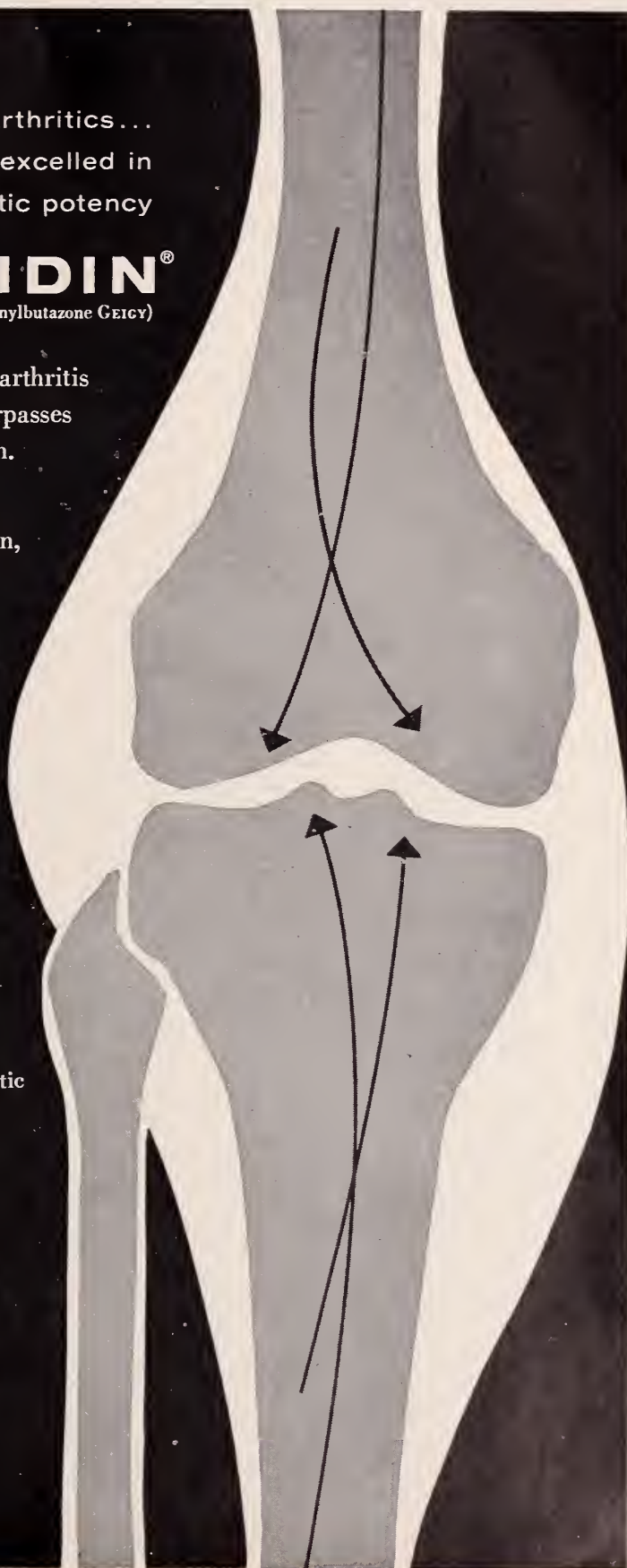
BUTAZOLIDIN relieves pain,
improves function,
resolves inflammation in:
Gouty Arthritis
Rheumatoid Arthritis
Rheumatoid Spondylitis
Painful Shoulder Syndrome

BUTAZOLIDIN being a potent therapeutic agent, physicians unfamiliar with its use are urged to send for detailed literature before instituting therapy.

BUTAZOLIDIN[®] (phenylbutazone GEIGY). Red coated tablets of 100 mg.

GEIGY

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... OPENING an OFFICE

Since 1860 A. S. Aloe Company has seen three generations of physicians open their offices for the practice of medicine, and has always stood by with a helping hand. Whether you plan to begin practice or re-equip an existing office, we can help you.

A National Institution: We have 13 shipping points throughout the nation and more than 200 representatives with permanent residences in convenient, nearby locations.

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needles to X-ray machines, with both itemized and total cost.

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...IN URINARY COMPLAINTS

- * Sterilizes urine in 1 to 3 days
- * Relieves burning in minutes
- * Effective in 93-98% of cases

sulfid*

The original Azo-Sulfa Formula* • Antibacterial • Analgesic

LOCALIZED MUCOSAL ANALGESIA

Phenylazo-diamino-pyridine HCl—acts solely on the urogenital mucosa; provides prompt relief from burning, pain and frequency.

LOCALIZED ANTIBACTERIAL ACTIVITY

Sulfacetamide—eliminates mixed infections rapidly because of its unusual solubility in acid urine common to bacterial invasion of the urinary tract. No renal damage, concretions or anuria.

...and when Spasmolysis is essential

sulfid* B-A

Antibacterial • Analgesic • Antispasmodic

—the dual activity of SULFID with the well-known antispasmodic effect of natural belladonna alkaloids.

*Introduced—July, 1954



PHARMACAL COMPANY

COLUMBUS 16, OHIO

designed to **control anxiety**
in Arthritis, Asthma, Allergic Dermatoses
with **lower corticoid dosage**

the original tranquilizer-corticoid

Ataraxoid*



prednisolone and hydroxyzine

provides the emotional tranquilizer, ATARAX[®] (hydroxyzine) and the preferred corticoid, STERANE[®] (prednisolone) • control of emotional factors by tranquilization enhances response to the corticoid for greater clinical improvement • often permits substantial reductions in corticoid dosage, accompanied by reduction of hormonal side effects • confirmed by marked success in 95% of 1095 cases of varied corticoid indications¹

ATARAXOID now written as

Ataraxoid 5.0

5 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in green, scored tablets. Bottles of 30 and 100.

and now available as **NEW**

Ataraxoid 2.5

2.5 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in blue, scored tablets. Bottles of 30 and 100.

and **NEW**

Ataraxoid 1.0

1.0 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in orchid, scored tablets. Bottles of 100.

advantages: (1) greater flexibility of dosage
(2) effective tranquilization permits lower corticoid dosage

formerly **Ataraxoid**
NOW written **Ataraxoid 5.0**

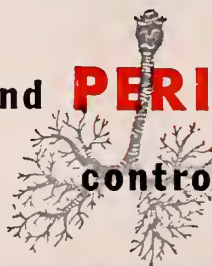
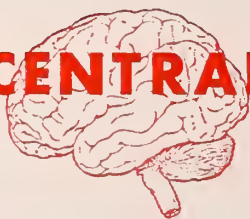
¹. Personal communications.

*Trademark.

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York

Pfizer

Both **CENTRAL** and **PERIPHERAL**



control of cough

SYNEPHRICOL® cough syrup

ANTITUSSIVE • DECONGESTANT • ANTIHISTAMINIC

Combines:

Central Antitussive Effect — mild, dependable
Topical Decongestion — prompt, prolonged

plus Antihistaminic and Expectorant Action

Winthrop LABORATORIES
NEW YORK 18, N. Y.

Synephricol, Neo-Synephrine (brand of phenylephrine) and
Thentadil (brand of thetyldiamine), trademarks reg. U.S. Pat. Off.

Each teaspoonful (4 cc.) contains:

Neo-Synephrine® hydrochloride	5.0 mg.
Thentadil® hydrochloride	4.0 mg.
Dihydrocodeinone bitartrate	1.33 mg.
Potassium guaiacol sulfonate	70.0 mg.
Ammonium chloride	70.0 mg.
Menthol	1.0 mg.
Chloroform	0.02 cc.
Alcohol	8%

Bottles of 16 fl. oz.

EXEMPT NARCOTIC



TIMBERLAWN SANITARIUM

For

Nervous and Mental Diseases

Phone Davis 1-2678

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★ ★

Complete modern facilities for Insulin Coma, Electroshock and Chemotherapy under constant medical supervision. Psychotherapy. Occupational therapy. All other accepted methods of psychiatric treatment.

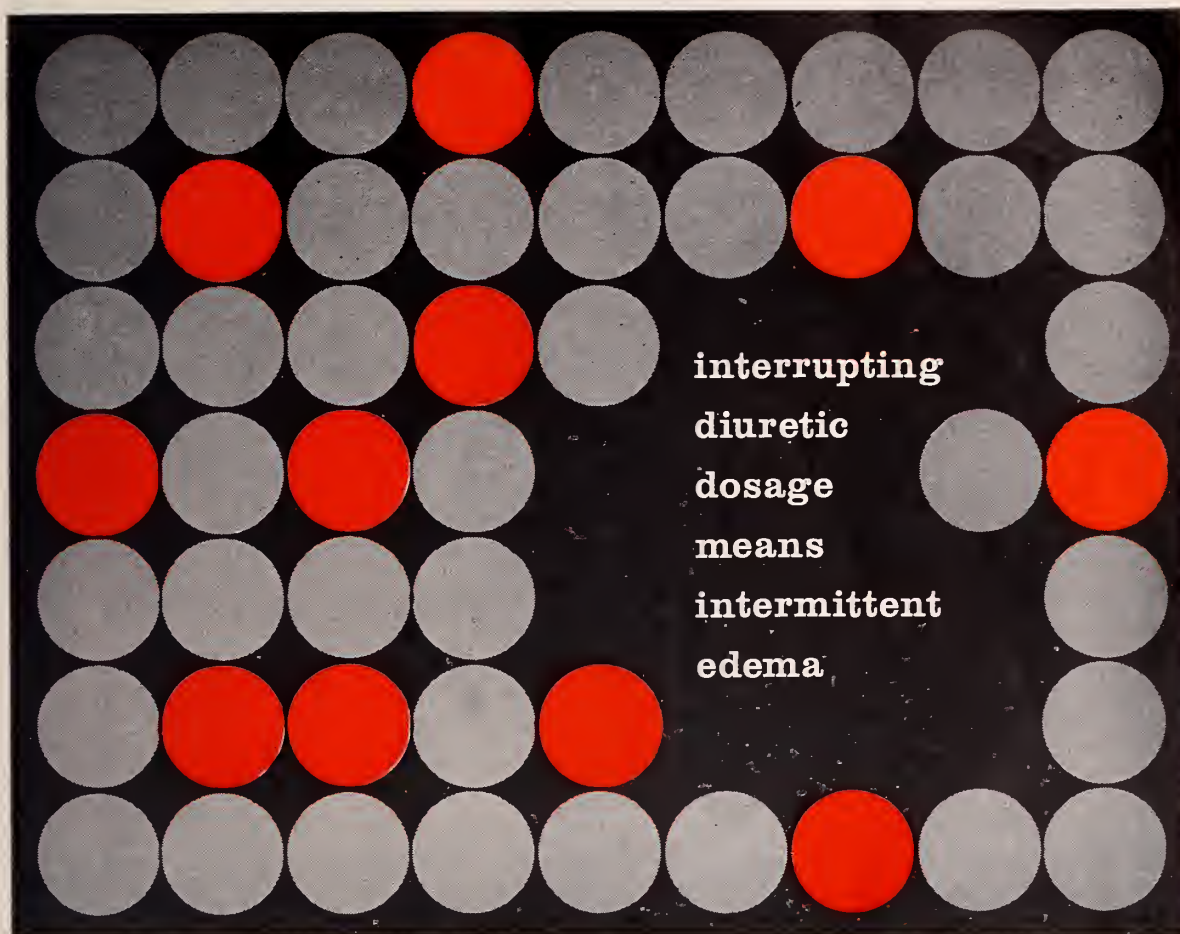
NARCOTIC CASES NOT ADMITTED

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PATIENTS IN FAILURE NEED AN ORGANOMERCURIAL

Diuretics needing "rest periods," whether enforced by dosage restriction to once daily, or by omission to alternate days, inevitably fail to achieve sustained control of edema.

The organomercurials never require interruption of dosage to prevent refractoriness and can maintain patients continuously in the edema-free state.

TABLET

NEOHYDRIN

BRAND OF CHLORMERODRIN (18.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA
EQUIVALENT TO 10 MG. OF NON-IONIC MERCURY IN EACH TABLET)

a standard for initial control of severe failure

 **LAKESIDE**

MERCUHYDRIN® SODIUM
BRAND OF MERALLURIDE INJECTION



TOM'S BACK!

SIX MONTHS AGO, when Tom came down with tuberculosis, his friends feared that he would disappear from the world of the well to spend years in a hospital.

Those fears might have been justified some time ago. Now, fortunately, when cases like Tom's are discovered early, doctors can often restore good health without the long stay in a hospital, and all the attendant worries about the problems of finances, family and future.

Tuberculosis is still a great problem when diagnosis is delayed and the disease has progressed. But experts agree that medical science has surely gained the upper hand

... through earlier detection, improved surgery and the anti-tuberculosis drugs. These advances have reduced tuberculosis from first to sixth place among the ten leading causes of death.

Obviously, the job is far from ended. Hospitals, universities and research laboratories the world over are searching constantly for more effective medicines of potential value in treating this once-deadly disease.

As a maker of medicines prescribed by physicians, Parke-Davis is proud to be among those engaged in this great, world-wide fight against tuberculosis.

Copyright 1957—Parke, Davis & Company, Detroit 32, Michigan

PARKE, DAVIS & COMPANY

MAKERS OF MEDICINES SINCE 1866

*Working with your physician, your pharmacist
and your hospital to make modern medical care one
of the most rewarding investments of your life.*

TIME * LIFE * TODAY'S HEALTH * POST



"Tom" had tuberculosis. And in this latest Parke-Davis message on the cost of medical care, "Tom's case" is used as a specific example of the heartening progress being made against sickness and disease.

The ad points out that, thanks to earlier detection, improved surgery and the anti-tuberculosis drugs, tuberculosis has fallen from first to sixth place among the ten leading causes of death.

Unfortunately, most people do not appreciate the priceless value of today's more effective medical care until they come face to face with a dread disease—like "Tom". And that's why, with a colorful new series of advertisements,* Parke-Davis is helping to give your patients a new and clearer understanding of what modern medical care can do for them—in terms of getting them well quicker, back on the job again, and even saving their lives.

In short, we're continuing to tell your patients that prompt and proper medical care may well turn out to be the biggest bargain ever to come their way.

PARKE, DAVIS & COMPANY

Detroit 32, Michigan



*Now in eye-catching color in LIFE, TIME,
SATURDAY EVENING POST and TODAY'S HEALTH.*

TIME * LIFE * TODAY'S HEALTH * POST

Medihaler®

For the Asthmatic



Fast Relief

Medihaler offers virtually instantaneous relief and does so with little effort and with maximum safety.

Measured-Dose True Nebulization

Delivers a measured dose of true nebular vapor...Dose is always the same regardless of strength of fingers or amount of medication in bottle.

Costs the Patient Less

Medihaler Oral Adapter is made of unbreakable plastic...no moving parts...and 200 applications in each 10 cc. bottle.



Medihaler-Epi®

Riker brand of epinephrine U.S.P. 0.5% solution in inert, nontoxic aerosol vehicle. Each ejection delivers 0.125 mg. epinephrine. In 10 cc. vial with metered-dose valve.

Indicated in acute or recurring bronchospasm. Replaces injected epinephrine in many emergency situations.

Medihaler-Iso®

Riker brand of isoproterenol HCl 0.25% solution in inert, nontoxic aerosol vehicle. Each ejection delivers 0.06 mg. isoproterenol. In 10 cc. vial with metered-dose valve. • Indicated in acute or recurring bronchospasm.

Note: First prescription should include desired medication and Medihaler Oral Adapter, supplied with pocket-sized plastic container.

The Medihaler principle

is also available in Medihaler-Nitro™ (octyl nitrite) for the rapid relief of angina pectoris...and Medihaler-Phen™ (phenylephrine-hydrocortisone-neomycin) for lasting, effective relief of nasal congestion.



LOS ANGELES

who coughed?

**WHENEVER
COUGH THERAPY
IS INDICATED**

Hycodan[®]

(Dihydrocodeinone with Homatropine Methylbromide)

- Relieves cough quickly and thoroughly
- Effect lasts six hours and longer, permitting a comfortable night's sleep
- Controls useless cough without impairing expectoration
- rarely causes constipation
- And pleasant to take

Syrup and oral tablets. Each teaspoonful or tablet of Hycodan* contains 5 mg. dihydrocodeinone bitartrate and 1.5 mg. Mesopin.† Average adult dose: One teaspoonful or tablet after meals and at bedtime. May be habit-forming. Available on your prescription.

Endo[®]

ENDO LABORATORIES
Richmond Hill 18, New York

*U. S. PAT. 2,630,400

† BRAND OF HOMATROPINE METHYLBROMIDE

Recent Advances

In Feeding Prematures

Recent metabolic studies have established rational feeding procedures for prematures.

The initial feeding, 12 hours after birth, consists of one dram of 5 per cent dextrose. This solution is increased by one dram at 2-hour intervals if tolerated and retained.

After twenty-four hours, breast milk or formula (table below) gradually replaces the prelacteal feeding at 2-hour intervals. The volume of a feeding may be increased up to 2 drams daily until maintenance caloric requirements are fulfilled by the fifth day. If the infant shows signs of intolerance, the formula increase is made more slowly and the fluid requirement fulfilled parenterally.

Successful feeding mixtures consist of dilutions of powdered half-skimmed or evapor-

ated whole cow's milk, skimmed or whole lactic acid milk. These formulas contain high protein, moderate carbohydrate and low fat, yielding about 120 calories and 150 cc. fluid per kgm. body weight.

The problems of prematures are always the same but the solutions differ with each era. Today the moderate carbohydrate requirement for normal infants as well as prematures is fulfilled by KARO® Syrup as adequately as a generation ago. Whatever the type of milk adapted to the infant, KARO may be added confidently because it is a balanced mixture of lower sugars resistant to fermentation, non-laxative, easily assimilated and well tolerated by all infants.

Readily available in all food stores.

MEDICAL DIVISION
CORN PRODUCTS REFINING CO.
17 Battery Place, New York 4, N. Y.

R_x FIRST FORMULAS FOR PREMATURES	
Fresh or whole lactic acid milk	6 oz.
Water	12 oz.
KARO	1 oz.
Evaporated milk	3 oz.
Water	15 oz.
KARO	1 oz.
Dried milk (half-skimmed)	4 tbsp.
Water	18 oz.
KARO	1 oz.

Feedings: 1½ oz. x 12 x 2 hours
Measures: 1 oz. KARO = 2 tablespoons

Caloric values: KARO, 120 per oz.; Cow's milk, 20 per oz.; Evaporated milk, 45 per oz.; Dried milk (½ skimmed), 35 per oz. (Vol.).

Equivalents: Red Label KARO or Blue Label KARO may be used interchangeably in all formulas.

Adapted from Nelson's Pediatrics, Saunders, Phila. 1954



Produced by
Corn Products Refining Co.

Behind Every Bottle... A Generation of World Literature

“À VOTRE SANTÉ”

(To Your Health)

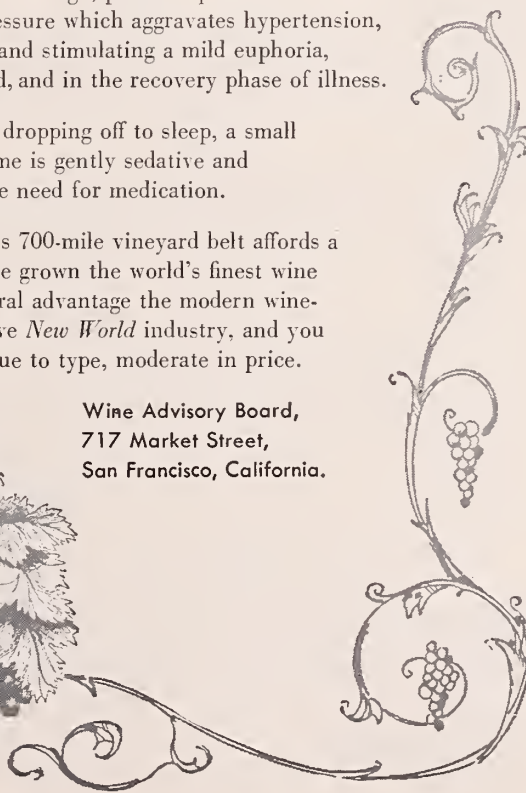
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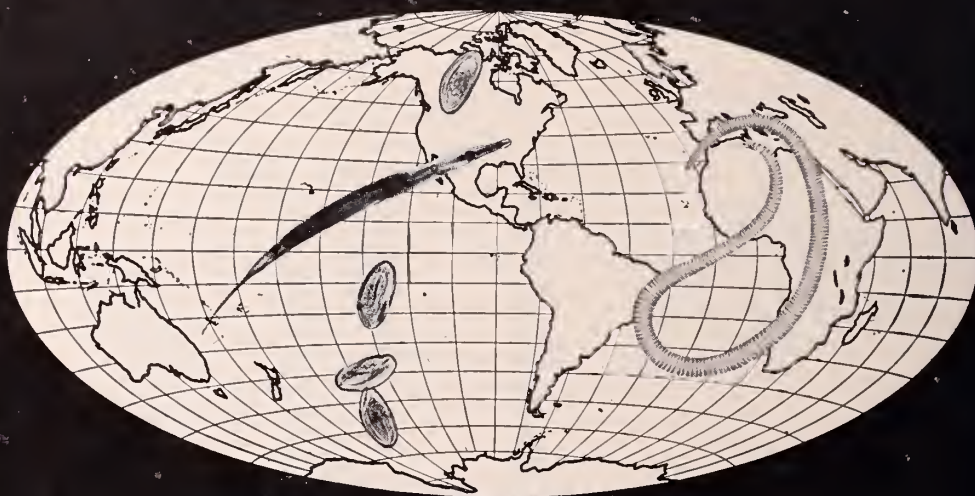
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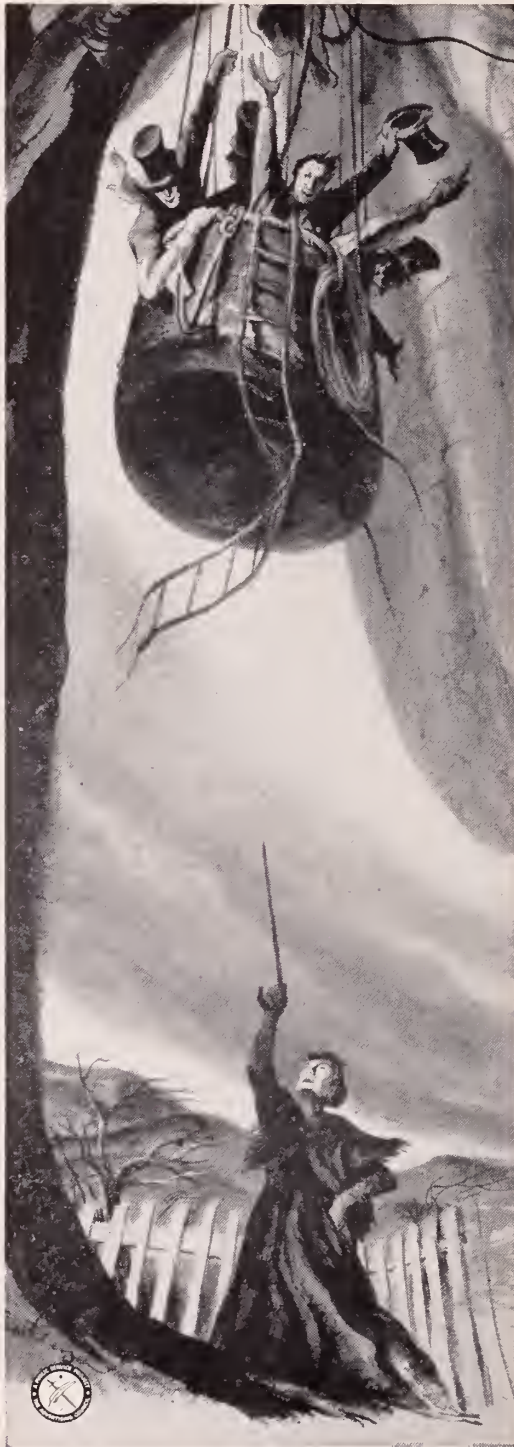
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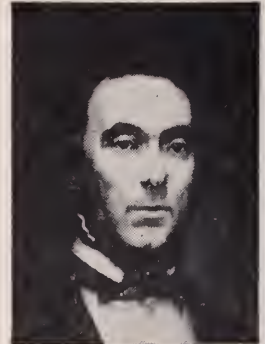
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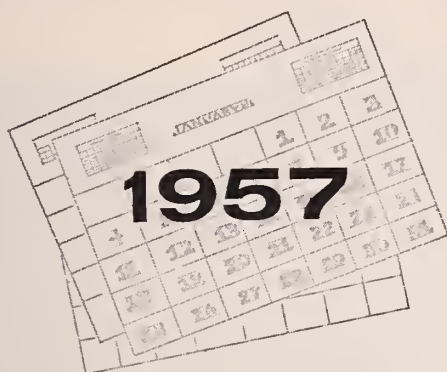
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1. Knoch, H.R., and Kirk, R.: Prochlorperazine—A New Agent for the Treatment of Psychic Stress, in manuscript.

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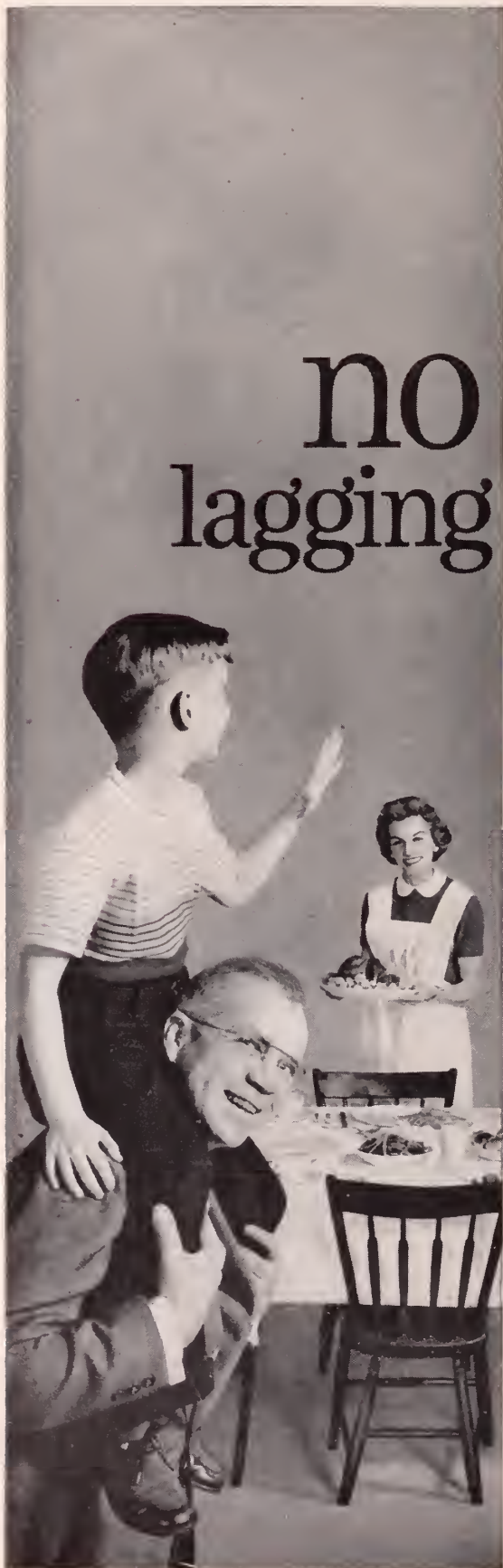
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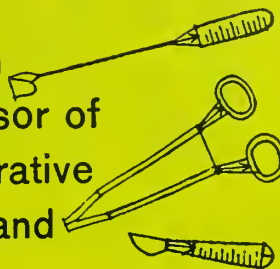
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REFERENCES

- (1) Jones, W. F., Jr.; Nichols, R. L., & Finland, M.: *Proc. Soc. Exper. Biol. & Med.* 93:388, 1956.
- (2) Spink, W. W.: *Ann. New York Acad. Sc.* 65:175, 1956.
- (3) Kempe, C. H.: *California Med.* 84:242, 1956.
- (4) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956.
- (5) Kirby, W. M. M.; Corpron, D. O., & Tanner, D. C.: *J.A.M.A.* 162:1, 1956.
- (6) Nichols, R. L., & Finland, M.: *Antibiotic Med.* 2:241, 1956.
- (7) Pearson, J. Z.; Somberg, A.; Rosenthal, I.; Lepper, M. H.; Jackson, G. G., & Dowling, H. F.: *Arch. Int. Med.* 98:273, 1956.
- (8) Wise, R. I.; Cranny, C., & Spink, W. W.: *Am. J. Med.* 20:176, 1956.
- (9) Kirby, W. M. M.; Hudson, D. G., & Noyes, W. D.: *Arch. Int. Med.* 98:1, 1956.
- (10) Walton, R. P.; Parker, R. T.; Sandusky, W. R., & Schaffer, A.: Panel discussion, *J. South Carolina M. A.* 52:33, 1956.
- (11) Altemeier, W. A.: *Postgrad. Med.* 20:319, 1956.
- (12) Weil, A. J., & Stempel, B.: *Antibiotic Med.* 1:319, 1955.
- (13) Krantz, J. C., Jr.: *Current M. Digest* 23:61 (Sept.) 1956.
- (14) Smith, R. T.; Platou, E. S., & Good, R. A.: *Pediatrics* 17:549, 1956.
- (15) Royer, A.: Scientific Exhibit, 89th Ann. Conv., Canad. M. A., Quebec, Canada, June 11-15, 1956.

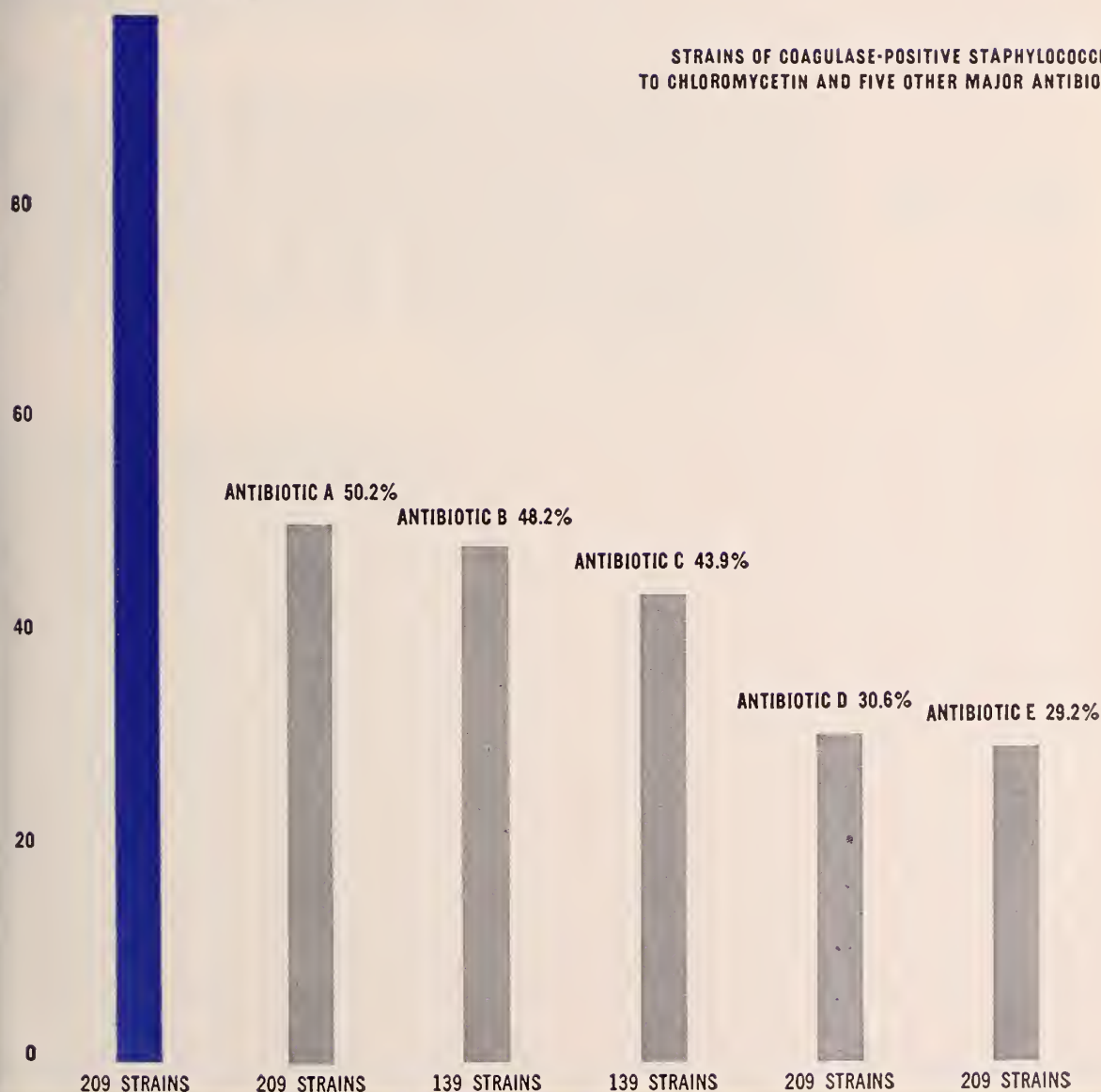
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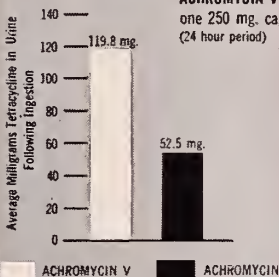
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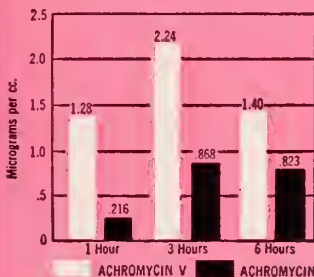
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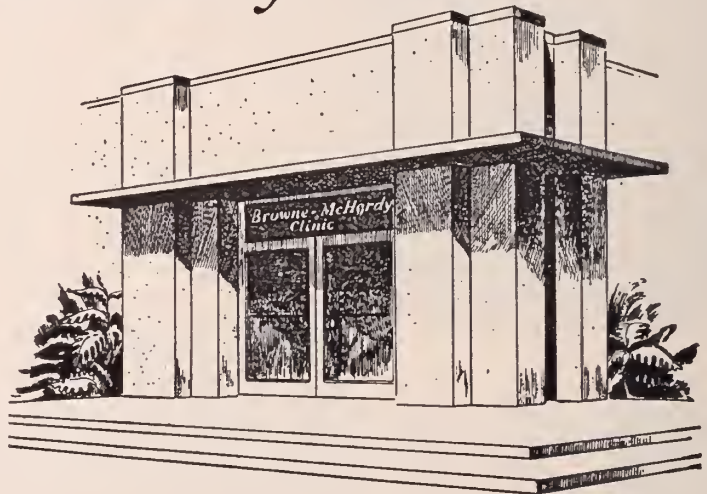
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milder side effects.
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In mid-1955, Abbott Laboratories released for clinical trial a new alkaloid of *Rauwolfia canescens*. This new alkaloid, later named Harmony, received special attention because of the high potency and low toxicity it exhibited in extensive pharmacological testing.

Since that time, Harmony has been tried in conditions ranging from mild anxiety to major mental illnesses and in hypertension. Every characteristic of the drug was studied . . . evaluated . . . compared. And from the reports, one fact stands out:

- In more than two years of clinical evaluation, Harmony has exhibited significantly fewer and milder side effects in comparative studies with reserpine. This, while demonstrating effectiveness comparable to the most potent forms of rauwolfia
- Most significant: Harmony causes less mental and physical depression. *And there are very few reports of the lethargy seen with many other rauwolfia preparations.*

This is not to suggest, of course, that side effects will not occur with Harmony—as with any potent therapeutic agent. But the mildness of side effects, in the few instances in which they have been reported, suggests Harmony as a drug of choice in conditions ranging from mild anxiety to major mental illness and in essential hypertension.

Why fewer and less severe side effects?

Some investigators suggest that the evidence of less parasympathetic effect with Harmony in animals might also be true in man. In chronic toxicity studies with Harmony this was manifested by less diarrhea, “bloody tears” and ptosis in rats than was observed with the same dosage of reserpine. Dogs also exhibited milder side effects—in particular, diarrhea. No organ toxicity or hematological change was observed with Harmony over a wide dosage range.

Harmony as a tranquilizer

While Harmony’s safety is most impressive, clinical investigators reported other notable characteristics for this wide-range

Harmonyl*

(Deserpidine, Abbott)

anquilizer. For instance, following an eight-month study of tonic, hospitalized mental patients, Ferguson¹ reported:

Harmonyl benefited at least 15% more overactive patients on oral reserpine.

Harmonyl was more potent in controlling aggression, requiring only one-half to two-thirds the dosage of reserpine.

A number of patients experiencing side reactions on reserpine were completely relieved when changed to Harmonyl.

In this summary Ferguson concluded: "*The most notable impressions were the absence of side effects and relatively rapid onset of action with Harmonyl.*"

Harmonyl in hypertension

Hypertension studies show that the average reduction in blood pressure obtained with Harmonyl compares closely to that obtained with reserpine. The tranquilizing effect of the two drugs appeared similar, except that few cases of giddiness, vertigo, sense of detached existence or disturbed sleep were observed with patients receiving Harmonyl.

Dosages In mild anxiety, as little as 0.1 mg. of Harmonyl a day may be effective. In institutionalized psychiatric patients, less than 2 to 3 mg. a day is likely to be beneficial.

In mild essential hypertension, treatment may be started with a 0.25-mg. tablet three or four times a day. After about ten days (or sooner, depending upon response), dosage may be reduced. A maintenance dose of 0.25 mg. daily is often sufficient.

Precautions. As with other forms of rauwolfia, Harmonyl should be used cautiously in peptic ulcer and epilepsy and in patients about to undergo surgery or electroshock treatment. Despite infrequent reports involving depression, patients with a history of depressive episodes should be watched carefully.

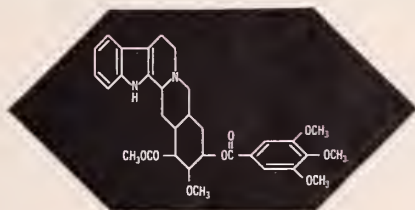
Professional literature is available upon request.

Supplied: Harmonyl is supplied in 0.25-mg., 0.25-mg. and 1-mg. tablets.

Abbott

Reference: 1; Ferguson, J. T.: Comparison of Reserpine and Harmonyl in Psychiatric Patients: A Preliminary Report, *Journal Lancet*, 76:389, December, 1956.

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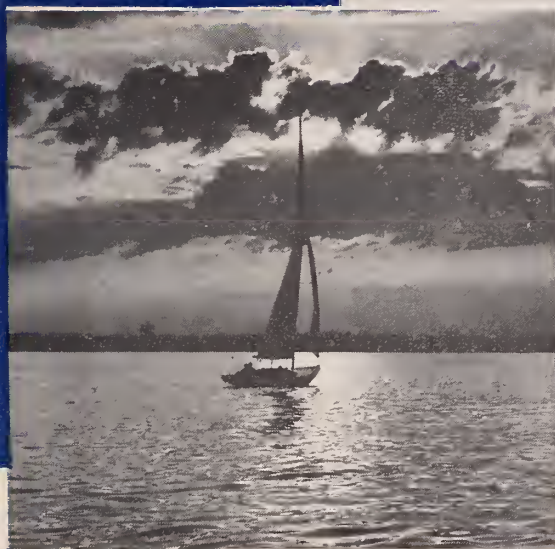
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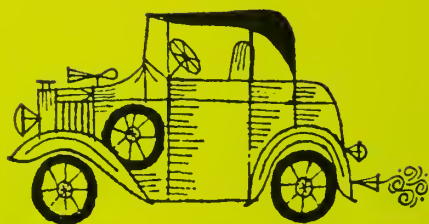
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SYMPOSIUM: THE LAW AND PSYCHIATRY *

GENE L. USDIN, M. D. †
HON. RENE A. VIOSCA ‡
RICHARD B. MONTGOMERY §
LEON D. HUBERT, JR. **
NEW ORLEANS

DR. USDIN: The awareness of the importance of closer liaison between the medical and legal professions has been increasing. With this awareness has come recognition of numerous defects in this relationship. Some cognizance has been taken of the basically different philosophies and techniques of medicine and law. Each profession has stressed its own methodology and clung to it with marked tenaciousness. Law's method is essentially that of the advocate or adversary process, while medicine utilizes an eclectic scientific method.

Physicians owe to society not only recommendations for improving the understanding between the two professions but also advice concerning appropriate standards. Obviously we could contribute much to improving a system which often produces injustices to a party litigant, who

is the ultimate victim whenever the best in law and medicine are not combined. The law complains not only of incomprehensible but also occasionally of incompetent testimony of physicians in legal medicine. On the other hand, physicians complain of being subjected to ridicule, of the adverse circumstances under which they appear, and of having to conform to legalisms. One of the biggest obstacles in the relationship of law and medicine has been the difficulty of communication between practitioners of law and medicine. This difficulty—this inadequate communication system must really be considered one of semantics. Each profession religiously guards and attempts to adhere to its own vocabulary. A better knowledge of each other's discipline and problems can help this defect. We should learn the rudiments of each other's discipline and try to simplify our language when interprofessional exchanges occur.

Fortunately, strides are being made to overcome the aforementioned: medico-legal conferences, symposiums, courses and lectures have been developed through the cooperative effort of bar associations, medical societies, and law and medical schools. These cooperative efforts stem from a realization that our separate codes of living in the two professions are no longer sufficient—that we must have some form of interprofessional code of life as well. In recent years, Tulane's School of Medicine has given a brief lecture course in forensic medicine to its

* Symposium presented to the Department of Psychiatry, Tulane University School of Medicine, January 14, 1957.

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medical students. The Department of Psychiatry especially has taken a forward step in having a five-lecture course in legal aspects of psychiatry for psychiatric residents; our symposium this afternoon is the final aspect of the course.

We are especially fortunate to have on our panel this afternoon three outstanding figures in Louisiana law. Our first panelist is Judge Rene Viosca. Judge Viosca, a judge of our Civil Court for many years, is a former United States District Attorney. I can comfortably state that he is recognized as one of our state's foremost jurists. Our second participant will be Mr. Richard Montgomery. Mr. Montgomery is the senior partner of Montgomery, Barnett, Brown, Sessions and Read, past president of the Louisiana State Bar Association, and recognized as an outstanding figure in medico-legal practice. Our third panelist is our progressive District Attorney, Leon Hubert. Prior to becoming District Attorney of Orleans Parish in 1954, Mr. Hubert was a Professor of Law at Tulane and has been a part time Law Professor since 1954.

Our first speaker, Judge Viosca.

JUDGE VIOSCA: Dr. Usdin, ladies and gentlemen: I gather from the introductory remarks as well as from comments that I have heard, and also from statements in publications dealing with psychiatry and the law, that there seems to be considerable misunderstanding as to the judges' functions, the lawyers' functions and the expert witnesses' functions in the judicial trial. I shall attempt to explain to you in the time allotted to me for introductory remarks, the part that each of these persons, or parties, plays in a trial.

A judicial trial, of course, has as its object a determination of the truth. Whether the case is tried by a judge or by a jury, the facts must be presented and established. I am referring to facts as distinguished from law. The facts are presented by lawyers who put witnesses upon the stand. Sometimes they use lay witnesses only. Occasionally, they use ex-

pert witnesses, whether they be physicians, lawyers, engineers, surveyors, or whatnot. After the facts are ascertained, the judge must apply the law to those facts; and, of course, the law, at least in our jurisdiction, is said to be the expression of the legislative will. The judges do not make the law; they simply interpret and apply it. The same is supposed to be true of the Federal Courts, although it does not always work out that way. Occasionally, judges will make law where the law is not clear, and in some cases interpret it to their own satisfaction. Ordinarily, a witness placed upon the witness stand can testify only to facts. He is not permitted to express opinions. That function is left to the judge or jury. The expert witness is one of the exceptions to that rule. The expert may testify to facts. For instance, if he is the treating physician he must testify as to his treatment and the condition of the patient as he found him, etc., but he is also permitted to go beyond facts and express an opinion. Sometimes experts know none of the facts of the case at all, but they are permitted to answer hypothetical questions based upon an assumed statement of fact. While the expert is permitted to express an opinion, the opinion is not binding on either the jury or the judge. It is considered along with all other evidence. If the jury concludes from the facts that it does not agree with the opinion of the expert, of course, it, being the final arbiter, reaches its own conclusion as to the outcome of the case. The same applies to the judge. The big difficulty, and I believe this is what has caused most of the misunderstanding, is that we are compelled time after time to disregard the opinions of the experts because they are not grounded on the facts in the case as found by the judge or jury. You, as an expert, do not have investigators, you do not have the subpoena power, you do not have the facilities we have in bringing in necessary witnesses, having them vigorously cross-examined by counsel, putting together the parts and finally determining what the facts are. Generally, you get

your facts either from members of the family, as in commitment cases and interdictions, or other matters of that kind, and often from the lawyers in the case in other types of litigation. Of course, lawyers are not witnesses, they are advocates. They are employed to present in the most favorable light the side of their particular client; and they may, in employing the expert, give to him the facts they think they are going to be able to establish in a court of justice. But when the case is tried, the jury or the judge may find that those are not the facts at all and of course must disregard the opinion of the experts. In most cases the expert, if given the same facts as the judge finds them, would probably reach the same conclusion as the judge.

Now, I will give you an illustration of how important it is to know what the facts are by citing a commitment case I tried a few years ago. It was before the present coroner was in office. The hearing was held at the Mental Disease Hospital (no longer in existence) where the judges always held court in order to avoid the necessity of bringing these poor unfortunates to court. This particular lady patient, whose commitment was sought, had asked the Coroner for the privilege of talking to the judge. Actually we interview them all anyhow. I looked at the record in this case and all the record showed was that some years before she had had a nervous breakdown and was treated as an out-patient by Charity Hospital. She was now brought to the City Mental Hospital some eight or ten years later for treatment because her husband said she was mentally incompetent. The record showed that she had the delusion that she had money in the bank and that her husband was trying to get it out of the bank. When I interviewed the lady, she seemed to be in full possession of her faculties. She said that she did not know why she was there, that she was treated once before but she was well, and that her husband was trying to have her incarcerated in a mental hospital so he could get her money. I inquired,

"You say you have money?" and she replied, "Yes." I asked where it was and she gave me the name of a large New Orleans bank. I inquired, "What branch?" and she said, "The main branch." I asked, "How much do you have?" and she gave me a specific figure, we will say it was \$8,411.30. I inquired if she thought her husband was trying to get this money and she answered, "Yes, he has gone down there with my book and tried to draw the money out." So, after she stepped out, I asked the psychiatrist whether he had made any effort to check these facts because her story had a ring of sincerity. Of course, I know most of these stories do appear sincere, but usually these patients have delusions that have no basis in fact at all; I could give you some very interesting cases of that kind. In this particular case I thought it my duty either to set a hearing in court and subpoena the records of the bank or endeavor to secure the information by telephone. I spoke to the officers of the bank by telephone and told them that unless we could get the records I would issue a subpoena, but they could treat my request as an oral subpoena. So they put the clerk on the telephone, and I asked if the bank had an account in the name of this lady. He checked and found that they did. I asked, "How much?" and he replied, "\$8,411.30," the exact figure the lady had given me. I asked, "Well, now, has anybody been trying to get that money out?" He answered, "Yes, her husband has been around here several times; he even brought her book trying to get it out." So there went the "delusion." It was an actual fact, and with that out of the case, there was nothing left except this prior treatment as an out-patient some years before. Now, I have no doubt if the psychiatrists had known the true facts they would have immediately said there was nothing to this case. Probably they had so many cases there that they did not have an opportunity to observe all of them as thoroughly as they should, or they would have probably come to the conclusion that she was all right

in spite of the alleged delusions. There was the case of an opinion, a doctor's testimony, that the patient had a delusion when in truth and fact she did not have a delusion. We get a great many cases of that kind, not only in the field of psychiatry but of other branches of medicine.

I had one case in which a Negro had his hand crushed and he was suing for workman's compensation. His hand appeared misshapen. His lawyer put on the stand an expert who testified that he was an orthopedist, and this man could not possibly do any work and never would be able to do any work. Under cross-examination, the attorney for the insurance company put him out on a limb. The orthopedist testified that there was no question, that the workman could not have done any work in the past and would not be able to do any in the future. When the Negro was on the stand, the attorney cross-examined him, and the witness insisted he could not and had not worked at all since the accident. Finally, the attorney showed him a signature on the back of what turned out to be a check, and he admitted it. The attorney asked, "Now, were you not paid for one week's work?" He replied, "Oh, I do remember. I tried to work a week and had to quit." Finally, the attorney produced one check after another, and it turned out the man had never lost a day's work at all. He had earned the same pay, had lifted weights of 300 lbs. Meantime, the expert had left the courtroom. He probably thinks I did not believe him. But his opinion was grounded on the facts as he understood them. He thought this man had never worked when the truth of the matter is that he had always worked. Well, I asked the Negro, "As a matter of fact, you never lost a day's work. Is that it? Did you tell that to the lawyer?" "No." "Did you tell that to the doctor?" "No." "In other words you just framed this case." He answered, "Yes." I said, "All right, I will dismiss the suit." I had the testimony written up and sent to the District Attorney. The Negro was indicted by the Grand Jury for perjury and

given two years in the penitentiary. That case illustrates the importance of knowing your facts. Now, how you are going to get them? I do not know. You do not have any agency like the FBI at your disposal to go out and get the facts. Lawyers, I suppose, do exhaust them to the best of their ability and with this discovery procedure we now have are in a better position to tell you what the facts are. If you are asked hypothetical questions based on an assumed statement of facts, you get into even more trouble because you might have to make fifty different kinds of assumptions, depending on which witness the jury or the judge will believe in the end; for if it is found that any material fact is different from the one assumed, we must brush aside the opinion, because we do not know whether you would have the same opinion if you knew that additional fact. Now, that is one of the problems you are going to have to solve—How are you going to get the facts as the judge or the jury will ultimately find the facts to be?

Another criticism I have heard, and Mr. Montgomery may be able to take care of that, is the vigorous cross-examination to which experts are subjected in court. I do not suppose there is any solution to that. In the case of lay witnesses, cross-examination frequently uncovers perjury, hearsay, lack of knowledge or error on the part of the witness. We have to allow a reasonable amount of latitude, and of course the same goes for expert witnesses, in order that it may be ascertained whether there is error in the opinion or whether the opinion would be changed in the event other facts are assumed. But we must permit reasonable cross-examination. We try to have the lawyers do it in a courteous way, but sometimes we cannot control them. We have all kinds of lawyers at the bar, just as you probably have all kinds of doctors practicing. And when you find that the court permits a rigorous cross-examination it does not mean that the court lacks confidence in you and frequently does not mean that the lawyer has no confidence

in you. He is trying to do his best as an advocate for his client to get what he can favorably into the record. Sometimes writers of publications seem to place the lawyer and the doctor in the same category, but they are not. The doctor is a witness, the lawyer is simply an advocate. I have seen many a lawyer try a case and make a brilliant argument, but if after it is over, you put him on the witness stand under oath, and ask him, "Do you believe your client has a good case?" he would say "No," notwithstanding his long argument in favor of his client. But you experts are witnesses, not advocates. You are testifying, you are giving an opinion that you honestly and sincerely believe is the proper opinion to be applied to the particular set of facts. You are not advocates; you cannot take sides.

We do know that we have had the unfortunate situation of experts dividing up five one way and five the other way. I tried a compensation case in which seven doctors testified on one side that the man was a malingerer, and seven on the other side testified that he positively had a herniated disc. They tell the story of one case in which that situation developed and it was finally found upon operation, that the man had a cancer. He was neither a malingerer nor did he have a herniated disc. Now, of course, we know what you are up against. There are lots of things you cannot see. That is particularly true of the psychiatrist. You cannot see what is in the brain. Of course with the x-ray you can see herniated discs today. That reminds me of a point I did want to suggest to you. You say that the law is too rigid, calls for too much accuracy, and it will not yield or bend. I remember when the Louisiana workman's compensation law was first passed, every workman who said he had a back injury, but whose back was not shown to have a fracture under x-rays, was said by the experts to be a malingerer. Fortunately, some judges, in view of the lay testimony which showed how the man suffered and what work he could do or could not do around the house, believed the lay testimony over the

expert testimony. I say fortunately because if they had not, they would have done grave injustices. Because subsequently it was found by physicians that there was such a thing as a herniated disc and, even more recently, traumatic neurosis. I have no doubt that many of the suits that were dismissed were legitimate claims where the plaintiffs should have recovered. I have seen it work the other way around too—cases in which the workmen were supposed to have herniated discs which apparently appeared in the x-rays, but the insurance companies were able to take moving pictures of these men working. In one case that I tried the plaintiff was up on a scaffold painting his house and leaning backwards. Of course, when that man came into the courtroom he came in limping, and all x-rays according to the experts showed a herniated disc. As a matter of fact, I could see it with what little x-ray knowledge I had. So, when you say the law is rigid, it has to be rigid.

In other words, a lot of your work is experimental. You cannot blame us if we believe twenty people who have seen these men suffering at times even though there is nothing visible from the x-ray. Now, who knows that traumatic neurosis is definitely the solution. Perhaps there is some other cause that medicine will later discover. You cannot make a different law for every case, or a different law for every individual. You cannot give undue emphasis to one class of testimony, whether it be lay or expert. You must seek the truth by every known process.

DR. USDIN: Thank you, Judge Viosca. Our next participant, Mr. Montgomery.

MR. MONTGOMERY: Until recently psychiatrists who appeared in court testified principally in matters involving the capacity of litigants to make wills, donations, and contracts. They were called to the witness stand to testify as to mental status in cases of interdiction and commitment. Today, even the average lawyer rarely has such a case. On the other hand, if he represents insurance companies, he is involved almost continuously with medi-

cal witnesses. He must depend upon the psychiatrist in all cases involving neurosis, psychosis, concussion, and nerve injuries. This has become an age of specialization. Whether it is good or bad is difficult to say. It would seem to me that an attorney who represents both plaintiff and defendant is in a better position to evaluate his case and to know when to settle. Today, the majority of personal injury cases are compromised before trial. The lawyer, therefore, needs the advice of a medical expert long before the witness has to appear in court.

One of the greatest difficulties in the proper preparation of a case has been the failure of the lawyer and the doctor to take sufficient time to discuss the case thoroughly. At a meeting of the International Association of Insurance Counsel, Dr. E. Stephen Gurdjian, a professor at the Medical School of Wayne University in Detroit, Michigan, and Dr. Dean H. Echols of New Orleans, who occupies the same position at Tulane University and is also head of the Neurosurgery Department of the Ochsner Clinic, appeared in a panel discussion. There were two lawyers and a moderator on the same panel. The format of the panel was the supposed preparation of a case for trial. One lawyer and one doctor were preparing the case for the plaintiff, the other for the defense. The facts of the case were a postconcussion syndrome without loss of consciousness and the resulting disability therefrom. In the course of the discussion the doctors said many things that were valuable to the lawyers. I equally believe this is particularly worthy of consideration by you if you are called as a medical witness. Dr. Gurdjian had this to say:

"I think one of the very big difficulties between the way a psychiatrist studies a patient and the way a lawyer studies a client is that you are always interested in winning your case. We are interested in merely presenting the material as we see it, and at times this difference of attitude gets us psychiatrists in trouble, because we are told year in and year out, both in medical school, as well as afterwards, that we are to describe what we see and let the chips fall where they may."

No doctor should approach a conference with a lawyer with any idea in his mind other than that he is going to state the facts and conclusions as he sees them. He should never let the lawyer sway him in his determination to do this. On the other hand, it is a doctor's duty to understand that a lawyer is endeavoring to present the best possible case for his client; that it is not the lawyer's duty to determine whether his client is right or wrong. That is the duty of either the judge or the jury. It is a fundamental principle of English common law that in a trial the truth will best be served by a determined effort on the part of both lawyers to present their side of the case in the most favorable light possible to their client. It is believed that a trial is an anvil upon which the true facts are hammered out by arguments, examination of witnesses and cross-examination.

In one law school a professor of evidence staged a short drama which was acted out by various students. The professor, of course, had written down exactly what was to happen. Each student was requested to hand in a paper stating what he had seen. The students' papers varied so greatly as to the facts that one was lead to believe that they had not been present. But, when these same accounts were given to a jury selected from the class, the jury's determination of what the facts were was about 90 per cent correct.

One of the factors in a trial which seems to worry the medical expert is the fact that there will be differences of opinion between him and the other witnesses. This is bound to happen. It would seem to me to be prevalent particularly in the case of psychiatrists. The latter deals principally with subjective symptoms. The psychiatrist who is treating a patient is bound to be influenced very much more by that patient's subjective symptoms than is the psychiatrist who is called in to represent the defendant and who approaches the case in an entirely different manner. Furthermore, the science of psychiatry is changing and progressing from

day to day. When one realizes the short time ago it was that William James wrote his book on psychology, which I understand is the basis of most of our modern psychiatry, one can well understand that there is bound to be a difference of opinion among psychiatrists. A few years ago psychiatrists and neurologists did not believe it was possible to have a postconcussion syndrome without loss of consciousness. It is now accepted as a fact that a patient may.

The cases which require the testimony of psychiatrists, neurosurgeons, and neurologists are frequently the result of automobile accidents in which there are injuries to the head. The plaintiff does not return to work and claims he is totally disabled. The doctors examining for the insurance company believe that he should be able to return to work. There is, of course, no clinical evidence as to whether or not he is able to work. As I have said, every lawyer should realize that the doctor who is treating the patient is trying to cure him, and, consequently that doctor believes the patient is suffering from a neurosis or psychosis. The doctor for the insurance company, examining him and weighing the case from his experience, believes that he does not present a case of disability. The doctor should point out these facts in his discussion with the lawyer. He should even suggest that he be allowed to approach the other doctor and discuss the case. After all, justice will be best administered by a settlement of the case, and the patient will be better off by such a settlement. Many neuroses and psychoses are the result of long drawn out litigation. In many instances the patient has taken the position that he cannot work, that he is entitled to compensation, and, as a result, he cannot face the fact that he is no longer disabled. Therefore, a quick settlement, which can only be accomplished by a thorough understanding between doctors and lawyers, is the best for everyone involved.

It is my opinion that it is the duty of every doctor to appear as a witness and

to have an understanding of the processes of the law. A doctor, whether he desires to or not, is eventually going to be forced to testify. Sooner or later he is going to have a patient who is involved in a lawsuit, and it will then be necessary for him to testify as to his treatment of that patient. He is then going to testify as to the facts and draw a conclusion as an expert.

One of the worst things that could happen would be to have the majority of doctors refuse to testify in court. This would result in the professional expert. During the war, because of a dearth of doctors, it became the custom for doctors not to grant a lawyer sufficient time to discuss the case with him. He appeared at court, coming into the courtroom just before he was going to testify and leaving immediately thereafter. Both of the doctors on the panel hereinabove referred to were of the opinion that if a doctor were going to testify in court, it was his duty to discuss the case thoroughly with the lawyer beforehand. Both said that in recent years there were many instances in which they were called to testify and they did not even know for which side they were testifying. It was suggested that it would be better to meet with the lawyer outside of the doctor's office. In the office there are many patients waiting for treatment. The very fact that a lawyer usurps the doctor's time, under the circumstances, is embarrassing. They suggested a luncheon or dinner meeting.

The doctor should definitely tell any lawyer interviewing for the purpose of having him testify, that he will not do so, unless he is given sufficient time to make a proper examination and determination of the facts in the case and be paid for same. The person who is employing him should be willing to meet the expense of having all of the necessary examinations, laboratory tests, etc., which are needed to properly support any conclusion. Once having come to a conclusion, the doctor should then help the lawyer present the evidence and support this conclusion in the best manner possible. He should not

be argumentative, but he should realize that once he has stated a conclusion, it is his duty, as much as the lawyer's, to persuade the jury that this is the correct conclusion. He cannot merely state a conclusion and then wash his hands of the situation and say to himself that he is not involved in a lawsuit, but is merely stating the facts as he sees them. It is his duty, once he has stated a prognosis to the Court, to show the Court he is right. When he does this, there are not nearly as many disagreements among medical witnesses as one is lead to believe. In many instances, the supposed disagreement occurs because the facts have not been properly presented or understood.

Today, most lawsuits involve injuries arising from trauma. This is the result of the automobile. Most of these cases are settled. If they were not, the dockets of the Court would be so overburdened, it would be impossible to bring them to trial. The doctor should always point out to the lawyer the difficulties of defending concussion cases and cases of traumatic neurosis. He should point out that the other doctor, the attending physician, is believing the subjective symptoms of the patient. He should be willing to discuss the facts of the case with the other doctor. The doctor representing the insurance company should discuss the case with the attending physician. The courts are inclined to accept the fact that the attending physician is in a better position to estimate the amount of disability than is the doctor who makes one or two examinations in order to testify.

One thing which bothers doctors is the question of cross-examination. It is my opinion that no doctor who is telling the truth, and who knows the subject about which he is testifying, need worry about a cross-examination. Usually the court will protect him. Furthermore, he knows so much more about the subject than the lawyer who is cross-examining him that if he does not become worried or excited, he should be able to protect himself. The doctor should also remember that the lawyer is not making a personal matter of

the cross-examination, but that all he is doing is merely eliciting facts which are helpful to his theory of the case. When the whole matter is approached dispassionately, the doctor testifying truthfully should never fear cross-examination.

DR. USDIN: Thank you, Mr. Montgomery. Our next participant, District Attorney Leon Hubert.

MR. HUBERT: Dr. Usdin, Judge Viosca, Mr. Montgomery, ladies and gentlemen: Of course my remarks have to do entirely with the role of the doctor in criminal cases. Actually, science plays an important role in criminal cases. For instance, ballistics is a science, and handwriting or fingerprinting experts are scientists. And now the FBI has developed those general sciences to the point that they are very valuable aids in discovering facts, as Judge Viosca has put it, in connection with criminal cases.

From your point of view, of course, you are interested in the role of the doctor in a criminal case. There are two ways in which he plays a part, one of which you will hardly come in contact with and the other I think is probably Dr. Usdin's main interest here. The first one is, of course, the cause of death in any death case or in rape cases—whether or not there is evidence that there has been rape. I say you will not come into contact with that very much because ordinarily the only witness on that subject is the coroner, although, of course, the defendant could produce his own witnesses, and he might produce a private doctor if he wished, after having qualified him as an expert to disagree with the coroner as to the cause of death. But there you would have medical testimony which would have to be submitted to the judge or jury, as Judge Viosca has pointed out, based upon facts. He would say what he has found and his opinion as a result of that. I must say that very frequently I find terms in coroner's reports quite confusing. I do not believe that either science, law or medicine can abandon its language, its semantics, if you want to call it that. You need to have

the terms that you do use because of international exchanges and yet to a large extent it is true with the lawyer too. It is very difficult for us to get away from some of the expressions that we use. I think if there is a bit of tolerance on both sides it can work out. Many times I have had the coroner before the jury and asked him what was the cause of death and he tells me in a great many medical terms . . . "tamponade of the vascu-something-or-'nother," and I really cannot tell anymore than that because it never makes any more impression on me than that. I always have to come down to the point and ask: "Doctor, what killed the man?" And he says, "Well, he stuck a knife in his heart." Now that, of course, is what the jury wants to know and I suppose the rest of it is important too, but it has to boil down to that eventually. But, as I say, I do not believe you will ever come into much contact with those phases of criminal law.

If you are interested in psychiatry, there is a question which frequently is a burning question in criminal cases and is becoming more so all the time. I have only been District Attorney three years, but it seems to me that in those three years the plea of insanity in criminal cases has become more frequent. I think I should point out just a few technical points about that issue in criminal cases. The law recognizes two distinct types of insanity. I do not know that you recognize them for your purposes, but I will tell you what they are. The first is what is called present insanity—right today when we are going to try the man, the plea is made that he is presently insane. That has nothing to do with the condition of his mind at the time he committed the offense which may have been last week, last month, or last year. Our inquiry then is, is this man here today sitting in the court in such a condition that he can do two things: (a) assist his counsel in his defense, and (b) know what is going on, i.e., does he know the nature of the proceeding. You hear of a plea of insanity in a case and frequently

that is all that is being plead at that time, that the man presently is insane and that, therefore, he should not be tried now. This issue is usually raised by the defense but the State can raise it or relatives can raise it. But if any judge learns of it by formal pleading, or even informally, he on his own motion can appoint two psychiatrists, one of whom must be the coroner and the other a psychiatrist of his own choice. These physicians study the man for a maximum of thirty days and have completely free access to him. They are able to bring him over to the hospital to make tests. Then they report to the judge and their only report at that point can and should be, of course, what they have been appointed to determine—what is his condition now. Not what it is going to be, not what it was last week even, but what it is now with respect to those simple two points: does he know what is going on, and can he assist his counsel? If not, on principles of due process nobody should be put to trial under those circumstances. Well, suppose the judge finds that he does not satisfactorily pass those two tests. That is a judicial question aided by the opinion of the psychiatrist. He then sends him to the State Hospital, there to remain until his condition at a future time is such that he knows what is going on and can assist in his defense, at which point the trial will then go on. This can be repeated as many time as it comes up. If he never reaches the point where he knows what is going on and can assist his attorney, he will never be tried. He will stay in the criminal division of the state Mental Hospital all that while. Usually what happens is after a period of time the hospital certifies that he is all right, he does understand what is going on, he knows everything about it, and they will bring him back and the judge finds that he is competent now, and then we go to trial.

Now, the next point is, and I suppose this is the real insanity that the ordinary person speaks of in any case, what was his condition at the time of the offense?

Our law has a provision in it that there are certain states of mind in which a person should not be held criminally responsible. If a person is insane at the time he committed the offense, then the law also by specific provision, which is in Title 14, Section 14, says that a man who is insane at the time of the offense is simply not guilty of any crime. That is the effect of it. Now, that is not a judge question. In the other type of insanity that I spoke of earlier, the judge determines after hearing the experts and is guided largely by the experts, I say 99 per cent by the experts. Then he makes the conclusion whether the man is sane or insane. But this other issue goes on the merits as it were of the question, Is this man guilty or not? Consequently, it has been held by our Supreme Court that the judge cannot pass upon that issue and that it must be submitted to a jury so that if you become involved in such a case as that, you will be called as a witness to testify before a jury as to the question of this man's sanity, not today, because if he were not sane today he would not be tried today, but some day in the past when he is charged with having committed this offense. Here the test is entirely different, and, as a matter of fact, it is very difficult. There is where the real trouble begins in the field of psychiatry—what is legal insanity?

I am sure you have all heard of McNaghten's rule which, at least in statutory form exists in this State, although it has been modified by some of our decisions. I know that in the Army, for example, the test is considerably modified and I believe they recognize the irresistible impulse test. Our statutory law does not do that. It follows McNaghten's rule that a mental defect makes a man insane as it were. Now, that question is submitted to the jury, and of course there is where you get a big fight. One of our recent much publicized murder cases never progressed beyond the point of present insanity, although I had to disagree with the doctor there because I thought the lady knew exactly what was going on. I

thought she could assist in her defense, but after all I am not the expert. But that other point is quite rough indeed, and you can find some of the experts who will disagree on the subject. In one recent criminal case, there were two physicians on each side. It was a very close question as to whether or not this man fitted the definition of criminal irresponsibility. Was he normal? Of course he was not normal. I suppose that no normal person commits a crime; I do not know. We went through all of that at the time. Certainly, the existence of a psychosis, and I hate to start walking on your territory because that is dangerous at any time, but the point I am making is that it is not just anybody who commits a crime. Let me put it this way. I am sure there are certain very sound psychiatrists who believe that any abnormal conduct which manifests itself to the point where a person will commit what society says is a crime, is just not all there, he is not normal. But of course, that is not the test that is accepted today. Whether it ever will be or not, or whether some modification of it ever will be or not, we just do not know. Now if a man gets acquitted by reason of insanity, in other words if the jury finds that he did the crime, but does not think his mind was sane within the meaning of the law as the doctors gave their opinion, they find him not guilty because of his condition of insanity. Then, you may ask, well, what happens to that individual? After all, here is a man who, the doctors have already said, is psychotic or schizophrenic—I think that is a good term. He has a trigger mechanism of something or another, and off he will go and kill somebody. He did it once, but he was crazy then, there is no doubt about it, so we have to turn him loose, that is to say, we have to find him not guilty. Of course, that is an intolerable social condition, is it not? To put a man back into society who has this disease, we have to recognize it as such, but it is liable to manifest itself again and he may kill somebody else. So the Mental Health Act

of 1942 provides that when a person is found not guilty by reason of insanity, which must be a specific finding of the jury, then the District Attorney institutes another legal proceeding against him in that same court in which the question then is: Now is he any longer a danger to society? If he is, then we have to lock him up until he is no longer a danger to society. And who is going to ever say that? It is a very difficult problem.

DR. USDIN: Thank you, Mr. Hubert. I would like to start off the discussion by commenting on a point that all three legal participants have touched upon—that is, the importance of the psychiatrist avoiding being an advocate. I strongly believe that we must keep in mind, as Mr. Montgomery brought out, that if we have an honest medical opinion and feel that questioning has not brought out the important points of our opinion, it is our duty to somehow fully bring them out. Now, when the attorney for whose side the medical expert has been called (and “side” is considered a nasty term insofar as a medical expert is concerned) questions the physician, the medical expert is directed to answer only the questions that have been asked him, but when the other attorney cross-examines the physician the latter has an opportunity to take all types of license. You can answer the question that is being asked and also bring in tangential information. I think that it is often excellent tactics to get in testimony that you feel is pertinent to the particular case. I do not consider this being an advocate in the least.

Another point that has been brought out is that physicians must accept law from lawyers. I grant that in the individual cases, but I do think it important that we make some of our individual thought known as physicians and as individuals. The courtroom is not necessarily the place. This interchange of ideas is bound to produce healthier relations. A good example of what is being done is regarding McNaghten’s rule which concerns criminal responsibility. Here psychiatrists and lawyers have gotten to-

gether and aired the problem. Some changes have been forthcoming such as the Durham decision. Some of you may not like that decision, but certainly this has been a working between the two disciplines.

Another important point to keep in mind is that there are many times when physicians testify in court realizing that their testimony is contrary to what they might wish as human beings, or as physicians, but it is paramount to keep in mind that they are serving as medical experts to testify on medical facts and not as lawmakers or attorneys. This occurs frequently in personal injury cases in which we, as psychiatrists, realize that an individual who has a strong neurotic diathesis has a much greater possibility of having some minor factor precipitate overt or compensable symptomatology. The law recognizes no differences on this basis regarding the amount of liability of the employer or insurance company. Psychiatrists feel that two cardinal factors must be considered regarding a traumatic neurosis. First, the diathesis or basic tendency of the individual for psychiatric illness or overt neurosis. This includes the past history, present environment, and basic emotional problems. The second factor is the specific precipitating event or injury. For example, roughly speaking we might state that one person’s overt neurotic symptomatology is attributable to 95 per cent diathesis and 5 per cent precipitating injury. Another’s overt neurotic symptomatology could be attributable to 5 per cent diathesis and 95 per cent neurotic symptomatology. I am sure the law has good rationale behind this point. Would you comment about this, Mr. Montgomery?

MR. MONTGOMERY: In the first place, we are having enough trouble as lawyers and judges in railroad and shipping seamen’s cases when we try to apportion the amount of negligence between the plaintiff who is guilty of contributory negligence and the defendant who is guilty of negligence. If we start in to try to apportion how much of a man’s

disability is due to a pre-conceived condition or an existing condition and how much is due to the trauma, we are really going to spend our life trying one lawsuit or several lawsuits. After all, the law has to be adapted to give the greatest justice to the greatest number and, at the same time, try as many cases as possible because there is no greater injustice than to delay in the trial of a lawsuit. Furthermore, it seems to me that legally if I happen to be a person who is an unhappy person in any way, but going along doing my job and getting along with my family and then receive a concussion and become emotionally ill because of a pre-existing psychic condition—it seems to me that the law is always going to be forced either to take care of me by damages or workman's compensation. You cannot definitely say I would not have gone on for the rest of my life performing the proper functions as husband, provider, and workman if I had not had the injury, and do you not think, Judge Viosca, that the law is bound to give compensation for those situations? They cannot begin to try to apportion; we would never get through.

JUDGE VIOSCA: I think it is pretty well settled that if you run into a man, you have to take him as he is. If he is a weak individual who will suffer more serious injuries than an able bodied man, you nevertheless have to pay for it. You cannot draw a distinction in that. It is well settled if you have a dormant condition and it is aggravated by the accident, the defendant has to pay for that. As Mr. Montgomery says, if you attempt to try to base the amount of recovery on whether he was a strong or weak individual, you really would get into deep water. I think you would have confusion.

MR. MONTGOMERY: I think the true test you are going to get is, "Would his inability to work or to perform as a useful citizen necessarily have occurred if it had not been for the accident?" If the person has a tendency to a malignant mental condition, it is true it can become a very profound case, a very malignant

case, I think is the word you use now; they did not use that when I first examined a psychiatrist. You certainly cannot say that the motivating cause acting on an inactive matter or condition was not the actual cause of the result. It is like the old case. If I throw a lighted firecracker and you are forced to pick it up and throw it, well, I am responsible for your having thrown it. If I have a condition that might have remained dormant, but by reason of negligence the condition is activated which ends in injury, it is the proximate cause. And that is what you get back to—whether it is proximate cause, the cause of the present condition.

JUDGE VIOSCA: Let me ask you this, Dr. Usdin. If a man runs into a pedestrian who has only the sight of one eye, being blind in the other, and he blinds him in the other eye, is it your idea that he should not be charged with blinding that man? Is that only partially blinding?

DR. USDIN: I had hoped to make a comment before you made your remark. And that was to say in defense of myself that these questions are for provocation of discussion and not necessarily the view of the questioner. Actually, this is something regarding which I am primarily in agreement. There are certain unpalatable things about this. As a psychiatrist we will come across cases in which an orthopedist or neurosurgeon has seen a patient, and the patient has not responded to treatment. This frequently occurs in cases of unrecognized traumatic neuroses. The physician may feel frustrated, become angry, and consider the patient malingering. Then when the psychiatrist later reports that the patient has a traumatic neurosis secondary to the alleged accident, the initial physician may feel hostile regarding the psychiatrist's giving the patient a basis for compensation. It is not too infrequent a procedure for an orthopedist or a neurosurgeon to have cases referred by insurance companies with full authorization to have any additional laboratory tests, x-rays, consultations, etc.,

but "don't send him to a psychiatrist." Maybe Mr. Hubert now might amplify the three of our remarks.

MR. HUBERT: Well, actually the problem does not come up very much as I see it in criminal law. The only time it would come up would be when a man would say, "Now sure I shot him but he was going to die anyhow from cancer or something of that sort." The law cannot admit that as a defense. If you deprive a man of one split second of his life, if every doctor on earth would testify he was going to die in the next five minutes and you blew his brains out, that is murder.

DR. USDIN: We have the concept of euthanasia and some of our famous crimes of that nature.

MR. MONTGOMERY: You know actually that is one of the reasons why I am a great believer that it is the duty now of trial lawyers to attempt to settle their cases, because in many instances, as the doctor said, the man even gets well, but he has told his wife how sick he was, the boss does not want him to come back to work because he is scared he is in a condition in which he will be subject to re-injury, and the man develops an honest apparent psychoneurosis. A settlement will do more to help him, and yet the man is not a malingerer. One of the greatest mistakes a trial lawyer can make, in my opinion, because there is a disagreement whether the man can or cannot work due to a mental condition, is to assume that he is a malingerer; he probably is not a malingerer. He is probably not doing it on purpose. He has a condition which has developed either because he has had a bad psychic condition before or because of what happened afterwards. He is helping himself out because he has to help himself out, and this makes him think he is sick.

The doctor should always remember that in the final decision the Court may accept what he has said as true and still not decide as he has testified. For instance, in life insurance cases the question of what is or is not disability is entirely different from what is considered dis-

ability in compensation cases. In a suit on a life insurance policy an insured is totally disabled if he is unable to perform any occupation. In compensation cases the Supreme Court of Louisiana has held that a person who is unable to perform the duties of the occupation in which he was engaged at the time of his injury is totally disabled. The lawyer may not properly explain to the doctor what the issues of the case are. The doctor may testify that, in his opinion, a man is not disabled. The doctor could be right, because the man could perform many other duties other than the one he was performing at the time of his injury. However, the Court could still find that he is totally disabled. It is a difference in the legal definition of disability.

The doctor in testifying, therefore, must depend upon the lawyer to elicit the proper evidence necessary to support the lawyer's theory of the case. More often than not the decision is made without the Court believing or disbelieving any particular medical witness.

Another thing to be considered is that in the case of an injury resulting from negligence, the doctor believes that the disabling condition existed before the injury; that the accident did not cause the symptoms of which the plaintiff complains. It is to be remembered that the law is very liberal in declaring that the plaintiff must be compensated if an inactive condition is activated by reason of the injury, or in granting damages if the injury contributed in any way to increasing the plaintiff's disability. The Court may believe that the doctor is correct in stating that the patient had a neurosis or a psychosis prior to the injury and that the accident merely brought about a condition which was inevitable anyway, and yet be forced legally to find for the plaintiff. It must always be remembered that medical testimony is merely one block in a structure which is being built by a lawyer in order to have the Court determine the rights of a party litigant. The final decision is by the Court, but the lawyer, in advance of that determina-

tion, must present his case to the Court.

If this is remembered, many of the troubles which seem to exist in the preparation of a case involving medical testimony will disappear. The doctor will find that he is enjoying his court experience, because, after all, litigation is essential to life. Litigation is the remedy doing away with trial by combat or trial by ordeal, as modern medicine has done away with blood-letting. Without it modern life could not exist, and peace could not be maintained.

MR. HUBERT: I have a question I would like to ask because I think these gentlemen would like to know the answer to it. Mr. Montgomery, you are the practicing lawyer here. Suppose you approach a doctor, for example. You get an opinion from him and it is not favorable to you. Now, what should a lawyer do, put him under a bushel? Just what do you do with that? You would not produce him in court, I assume, he is against you.

MR. MONTGOMERY: Well, I am certainly not going to produce him in court. But, as you know, under the rules that you helped to write as a professor, Mr. Hubert, the opposing counsel can find out which doctors I had him examined by and take his discovery testimony. So that does not often face me. I rush around as soon as I can, if I have faith in the doctor, and try to settle the case for the best amount I can get.

JUDGE VIOSCA: Well, that is what I thought. So far as the trial is concerned, we rule that the opposing party has the right to find out if he is being treated by anybody else, and if the doctor is not produced it is a conclusive presumption that his testimony would be against the party who fails to produce him.

MR. MONTGOMERY: Under the federal rules, you have to, for your information. If you make an examination of a person for an insurance company, the insurance company's lawyer, the railroad company's lawyer must furnish the opposing counsel with a copy of the examination.

JUDGE VIOSCA: What I mean is, it does

not prevent you from trying to get another doctor.

MR. MONTGOMERY: No, it is your duty, provided you do not condone perjury, to do the best you can for your client. You are his spokesman in court. It is your duty under our theory of law to get it, to present the best case you can for that man, to accept what the man is telling you unless you have positive proof to the contrary. I would not take cases where somebody showed me the pictures of a man working, and I knew the man was lying to me that he was not working. I would refuse the lawsuit. And I think most lawyers would tell the man that they did not wish to handle the case because they could not become convinced that he was not perjuring himself to them and would perjure himself if he went before the judge. But it is just like in criminal law. You know one of the things doctors and others cannot understand is why you defend persons many times when it appears to be evident that they are guilty. But a defendant is entitled to his day in court and that is the theory of English justice—that he is not guilty or he is not presumed to be wrong until he has gone through a trial. In the French, Russian, and many other systems you are presumed to be guilty once you are arrested and charged until proven innocent. But that is not our system.

DR. USDIN: Another point that might be discussed concerns cases in which the major problem involved is medical, and the decision of either the judge or, when it is a jury case, the jury, is contrary to all medical opinion. There is a recent case in which three physicians testified that the testatrix was incompetent. As the other side had consulted a doctor who also felt the testatrix to be incompetent, they were not having any physician testify. The group attacking the will learned this and subpoenaed all four physicians. Notwithstanding that, the court decided that the person was competent. Again, here the importance of lay witnesses as Judge Viosca has brought out, comes in. Now, to my knowledge this is also possible in

criminal cases in which a lunacy commission reports.

MR. HUBERT: Well, yes, and I should have said too that the defendant has the prerogative of producing his own witnesses in addition to those appointed by the judge. That does not happen very much either. But you see the judge appoints the coroner and one other physician. Now, the other side could produce five other men, as many as he can afford for that matter, or who would come, who would take issue.

JUDGE VIOSCA: Dr. Usdin, in the case just mentioned where you referred to four experts, were you referring to the case in which you appeared regarding an attack on a will?

DR. USDIN: Yes.

JUDGE VIOSCA: Well, I am going to clarify that. You see it goes back to the question of what the law is governing that case. Now, the probate law of different states varies widely. The Louisiana rule . . . It is probably best stated in the case of the *Succession of Lambert*, which is still the law:

"The real question is, whether the brain or other physical organ, whatever it may be, which is the medium through which the action of the mind is manifested, is so diseased and impaired as to make it an untrustworthy vehicle for the conveyance of the true wish or will of the testator, unbiased by any delusion which may be the result of such disease. The law fixes the time for the application of this test at the *moment* when the will is made, and expressly recognizes the capacity of persons, subject at times even to complete dementia, to make a will in lucid intervals. When the will is established to have been made by the testator himself, unaided by others, and when its provisions and expressions are sage and judicious containing nothing sounding to folly, these facts establish a presumption, *even in the case of persons habitually insane*, that it was made during the existence of a lucid interval, and impose upon those who attack the will the burden of proving insanity at the *moment* the will was made."

Now, you see when you apply that rule, even though you can say that the day you saw this man he was absolutely insane, there is still the presumption that he made the will during a lucid interval. In the case you referred to, one of the

four experts testified that in his opinion the woman was always sane and could make the will. Two of the other three, in point of time, could not testify as to what her condition was at the moment the will was made, and the will in itself was sage and judicious, even though it did not contain the dispositions some beneficiaries would have liked. It was not one that was ridiculous in its terms, such as leaving \$10,000 to the moon and \$1,000 to each star on a particular night. That would, on its face, show insanity. The fourth witness was an expert who answered only hypothetical questions which were not based on the facts as they were ultimately found by the judge. Unless you can pin it down to the point of time when the will was made, you have to be able to show it was a type of dementia in which there could never be a lucid interval. As I recall, in the particular case all four experts conceded that it was the type of insanity in which there could be lucid intervals. There being no testimony as to the testator's mental condition on the date the will was made, I had to apply the presumption that it was made during a lucid interval.

MR. HUBERT: Criminal cases provide similar problems. You are not there. You have to reconstruct the scene and actually be called upon to say what was the condition of that man's mind at 3:00 in the criminal case, even in a civil case, on such and such a day in the past. Now, but notice that the test given in this case for testing whether a person has the will, shall we say, has a sufficient mentality to make a will, is quite different from the one about committing crime, whether it excuses you from crime. There again, sir, as an expert, you would have to adjust your medical thinking I suppose to the legal question that is involved. You could not testify in a will case the same way it seems to me that you would testify in a criminal case, as to the measure of the insanity, because it is a different test involved.

JUDGE VIOSCA: Of course, that brings up the suggestion you made, Dr. Usdin,

that if psychiatry and law work together, maybe there might be a better rule than this to apply to wills, that the legislature might perhaps be induced to adopt some new test rather than the present test that has been founded on 2,000 years of experience, all the way down from the days of Rome; but that is the law. Now, the judge has to apply this law. If your opinion does not fit in, that is if you cannot say that at that particular moment two years before you saw this woman, or two years after you saw her (if you treated her before) she could not have a lucid interval, and if the document was written entirely in her own handwriting and makes sense, then the courts can and must disregard all the experts' opinions.

MR. MONTGOMERY: You get down to the same rule in even ordinary civil cases. For instance, a doctor testifying as to what is 'total disability' in a compensation case may mean a different degree of not being able to work than he will in a case involving a life insurance company where 'total disability' is defined as the inability to perform any occupation for remuneration or profit. When you get to the ultimate conclusion that has to be answered by either the court or the jury, there is no case in which the law, defining what the degree of disability is, does not come into play. That is why I say that in each individual case the doctor must first ascertain what the ultimate decision to be made is based upon. The lawyer may mislead him, because he may even have a different theory as to what it constitutes. I have lost cases involving disability under insurance policies because the court did not interpret the policy in the same manner that I presented my case. Under my theory this man was clearly disabled on the basis of the doctor's testimony, but the court decided that was not the proper interpretation of it.

DR. USDIN: That problem is a very difficult one. Especially have we had it on lunacy commissions where you are called upon to examine a man. It is fine to examine his present sanity. But then later on you may be called upon to deter-

mine his responsibility based on the "right or wrong" concept for something he did two, three, or even at times eight months, prior to when you first saw the patient. It is a difficult problem and requires some feeling of omniscience if you want to answer with confidence. The only thing you can say is, and I preface such opinions with, "to the best of my knowledge." I do not have any feeling of ever saying a man was or was not legally sane other than "to the best of my knowledge," and realize how inadequate one's knowledge must be for determining a man's mental status several months prior to the examination, realizing he was possibly committing a crime, realizing that he might have had the emotional tension of that, and realizing that a large proportion of these individuals are psychopaths or sociopathic personalities who may malingere.

Dr. Monroe, you have appeared as a psychiatric expert in some recent criminal cases. I wonder what comment you might have.

DR. MONROE: * Well, I have only one comment which leads up to a question. That is, in my experience and that of a number of other psychiatrists I have talked with, what we fear most is getting into court and, at least with regard to criminal insanity, not being able to properly testify because of the limitation of the McNaghten formula and the rigors of testimony in the court. The feeling that most of us have after we have testified is that we have not been allowed to express our expert opinions.

MR. HUBERT: But is not that because you do not agree with the McNaghten rule?

DR. USDIN: I would like to interrupt for a moment to ask Mr. Hubert if he would state McNaghten's rule.

MR. HUBERT: McNaghten's rule states:

"If the circumstances indicate that because of mental disease or mental defect the offender was incapable of distinguishing between right and wrong with reference to the conduct in

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question, the offender shall be exempt from criminal responsibility:"

You know what that means? Now, do you agree with the Rule, Dr. Monroe?

DR. MONROE: In answer to Mr. Hubert, I would say, in part, yes, but what I mean is that if testimony is limited to the pertinent aspects of the McNaghten rule, it is obviating half of our modern psychiatric knowledge.

MR. HUBERT: Of course, the only remedy for that, in my opinion, would be to have the legislature change that rule, and some of them are doing it, as the Durham case does to some extent. It modifies that rule.

DR. MONROE: This is the other question that I was wondering about. If the psychiatrist would not have the attitude that everybody who commits a crime must be sick, or must be abnormal; if the psychiatrist accepted the concept of bad character, would lawyers and judges be much more willing to allow the broader Durham type interpretation to be applied? That is, the criminal act was a product of a mental illness.

MR. HUBERT: Well, I think that is so. Actually, I think the bar and the legislators are fearful, as they are in many other fields, of departing from a rule that they say, in any case, has worked for 100 and some odd years or more. So, I think that is largely it. I think what the Army did during the war was perhaps a big step toward overcoming the McNaghten rule eventually. Of course, I remember Judge Viosca telling me many years ago that his impression was that after all when it all gets before a jury the truth somehow comes out. Perhaps you can elaborate on that somewhat, Judge, either on questions of fact or, for that matter, on the questions of insanity, somehow just throwing it into that mill of twelve jurors produces the result. I have in mind, for instance, when you give to jury in a civil case several or

half a dozen different hypotheses based on different slight variations of fact, then tell them to remember all that (and they are only laymen, they are neither lawyers, nor doctors), then to come back and give you a result, what they do is decide now who is right and come back with that answer.

JUDGE VIOSCA: In criminal cases after three days of trial they usually evaluate the prisoner and determine whether or not he is a crook and should be placed in jail or honest and should be released. That is about it. Fortunately, we do not have many civil jury trials in Louisiana.

DR. MONROE: In line with this, I agree wholeheartedly. I think that you get the best decision with a jury. But I think what has happened under the McNaghten rule is that whether this is agreed openly or tacitly most of the criminal responsibility cases are being decided by the psychiatrist, where they function as the judge, the jury, as well as the expert witness by not even letting the defendant get to trial, and this is what I think is bad about the McNaghten rule.

MR. HUBERT: When you say "not get to trial" you are talking about present insanity, are you not?

DR. MONROE: Yes, that is right.

MR. HUBERT: And that is not the McNaghten rule.

DR. MONROE: I am talking about the way justice is practically applied.

DR. USDIN: You mean insanity at the time the act was committed, is that right, Dr. Monroe? That is where the McNaghten rule comes in.

DR. MONROE: No. My point is that, by and large, the psychiatrist gets the first crack at the defendant, usually at the time of determining whether he can stand trial or not, and this is one time he can act freely. The sanity commission appointed by the court, and not by either one side or the other, has the force of the court behind it and gets all the ma-

terial necessary. I think that most psychiatrists feel they cannot give adequate medical testimony in courts so they make a pre-trial decision. As it now exists, court psychiatrists are functioning as judge, jury, and lawyers. And what they are doing is preventing a legal disposition in these cases by ruling the defendant unable to stand trial and hence committable.

MR. HUBERT: Well, then, of course, I have to comment on it by saying that I do not know that that is a proper function of the psychiatrist by law.

DR. MONROE: I do not think it is either, but I think this is what they do whether they admit it or not.

MR. HUBERT: If I understand you correctly, what you are saying here is that we will say that she or he is presently insane because when it comes down to testifying about insanity at the time of the offense we will be met by the McNaghten rule and a lot of other business, so we might as well block this off right now. Is that what . . .

DR. MONROE: Yes, the psychiatrists feel there will be a miscarriage of justice, so they determine the disposition themselves.

DR. USDIN: As one who also has testified on sanity or lunacy commissions, I would like to reiterate and emphasize the yoke that McNaghten's rule places on the psychiatrist. However, I do not believe that experts should and are anticipating legal disposition by slanting testimony to determine disposition themselves.

I see this symposium has already gone thirty minutes longer than we had anticipated. I realize that there is still much of interest that we could further consider, but I think we should draw it to a close now. I want to thank Judge Viosca, Mr. Montgomery and Mr. Hubert for being with us and aiding us to better understand aspects of the law.

ORGANIC PHOSPHATE INSECTICIDE POISONING; AN AGRICULTURAL OCCUPATIONAL HAZARD *

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There are many occupational hazards that confront the farmer. The high incidence of trauma in many different forms is well recognized by the medical profession as a leading cause of disease and time loss among the farmers. But in the past several years the widespread use of insecticides as an integral part of modern farming has added a new hazard to the already difficult life of the farmer.

Many of these insecticides are relatively nontoxic to the human. DDT, for example, has been used for years in huge quantities throughout the world with but few cases of acute, and probably no cases of chronic poisoning being reported. Other chlorinated hydrocarbons such as chlordane, dieldrin and lindane have been extensively employed on the farm with but few reported cases of acute intoxications as a result of exposure to the agents.

The organic phosphate insecticides, however, are extremely toxic to man, and there are many reports of acute, sometimes fatal, poisoning following exposure to these compounds. The toxicity of the organic phosphates as a class is attested to by the fact that some of these compounds are employed as war gases. These extremely toxic members of the group are popularly termed "nerve gases". However, the organic phosphates employed as insecticides are not as toxic to the human as "nerve gases" but they are dangerous enough to make special handling precautions mandatory. Many cases of poisoning due to these compounds were encountered in Louisiana last year, and more are ex-

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pected during the crop-spraying season this year. These toxic organic phosphates may enter the body by three routes: by mouth, through the respiratory tract, and via the intact skin. This makes these insecticides difficult to handle, as the risk of exposure is ever present via these several routes.

INCREASE IN USE

The use of the organic phosphate insecticides has become more widespread each year since they were first experimentally employed in this State in the early part of this decade. The increase in the use of these agents, despite their toxicity to humans, has been brought about by increased resistance of the insects to other types of insecticides, notably the chlorinated hydrocarbons. In 1954, 115,500 pounds of Parathion (one of the organic phosphates) as 1 per cent dust was used in Louisiana.¹ In 1955, this figure had risen to 440,000 pounds. Parathion employed in the liquid form had increased in amount from 1,500 gallons in 1954 to 2,000 gallons in 1955. The figures for the year 1956 are not yet available but a marked increase in the use of organic phosphate insecticides will certainly be noted. In the year 1957 even greater quantities of the organic phosphates will be employed in this State as there is now greater insect resistance than ever before to all other insecticides. An examination of Figure 1. will reveal that

the insect population of Northeast and Northwest Louisiana cotton fields are resistant to all insecticides but the organic phosphates. It is from these regions that the greatest number of poisonings due to these agents is to be expected.

In order of decreasing toxicity, the organic phosphate insecticides that may be employed in the State of Louisiana during the 1957 crop-spraying season are: TEPP, Parathion, Demeton (Systox), Guthion, and Malathion. Of these compounds Parathion and Malathion will probably be used in the largest quantities, in the form of both dusts and sprays. These agents will be applied to the crops by aircraft and tractors. Of the above mentioned agents, only Malathion is readily available to the home-gardener. Malathion is marketed in the form of aerosol bombs and flake form to be used in the home for fly and other insect pest control. Fortunately Malathion is not nearly as toxic to the human as the other organic phosphates, although several cases of poisoning have been attributed to it.²⁻⁵

MODE OF ACTION

The organic phosphates have a common mode of action: they depress the cholinesterase system of the body. The cholinesterases comprise a vital enzyme system, one function of which is intimately concerned with transmission of the nerve impulse. One form of cholinesterase is concentrated in the region of the nerve synapse, and is just as essential in nerve impulse transmission as is acetylcholine. It is well known that acetylcholine is formed at the synapse at the arrival of the nerve impulse and it is this agent that stimulates the next nerve to discharge. Actually, the cholinesterase destroys the acetylcholine almost as rapidly as it is formed at the synapse. In so doing, the cholinesterase prevents an accumulation of acetylcholine and repetitive firing of the neuron and a prolongation of the refractory period is avoided.

If the cholinesterase activity is depressed by one of the organic phosphates there will be no enzymatic destruction of

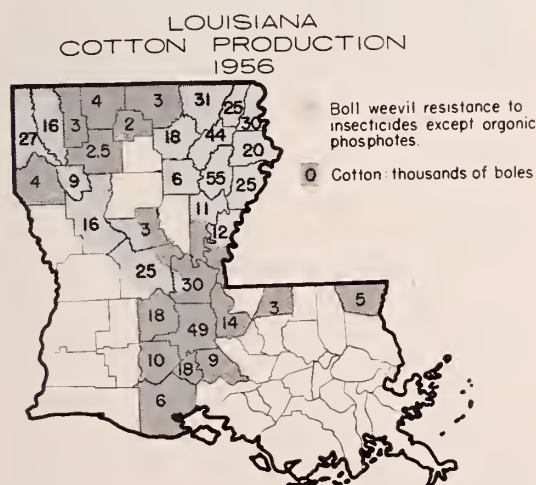


Figure 1. Louisiana cotton production and boll weevil resistance 1956. (Courtesy of K. L. Cockerham).

the acetylcholine and the distal nerve of the synapse will be repeatedly fired by the high levels of acetylcholine that will accumulate. Consequently, the effect of the organic phosphate will be mirrored by the symptoms and signs of an overactive nervous system. Not all parts of the nervous system are known to function by means of the acetylcholine-cholinesterase system. The parasympathetic nervous system, the central nervous system, and the motor end plates of the nerves supplying the skeletal muscles do function by means of this chemical system. Therefore, poisoning by any of the organic phosphates will be clinically indicated by an apparent overactivity of the parasympathetic nervous system, bizarre functioning of the central nervous system, and manifestations of hyperactivity of the skeletal muscles.

CLINICAL SIGNS AND SYMPTOMS

Long lists have been prepared of the clinical manifestations of this type of poisoning.^{6,7} However, these are hard to visualize and recall. Instead of such a list a drawing of a hypothetical case of organic phosphate poisoning is presented as Figure 2. The sketch of this man shows many of the most easily recognizable signs of organic phosphate poisoning: pinpoint pupils, a tense and anxious expression, profuse perspiration, abdominal distress, respiratory difficulty, weakness, and involuntary urination. Other signs and symptoms not so readily shown by such a drawing are: profuse salivation, wheezing, muscular hyperactivity and fasciculation, involuntary defecation, and coma. Of course, one individual may not show all of these signs and symptoms. The symptoms may progress rapidly from the initial, barely recognizable changes from normal, to extreme symptoms and death. Hours, or in very severely poisoned cases, only minutes may pass from the onset of symptoms to coma and ensuing death.

BLOOD CHOLINESTERASE LEVELS

In addition to the clinical signs and symptoms, the laboratory may be of aid in the diagnosis of organic phosphate poisoning. Two members of the family



Figure 2. A sketch of a hypothetical victim of organic phosphate poisoning.

of cholinesterases are present in the blood: true or red blood cell cholinesterase is concentrated in the red blood cells, and plasma or pseudo cholinesterase is found in the plasma. The former type is similar to that found in the areas of the nervous system previously mentioned. Both of these members of the enzyme family are inactivated by the organic phosphates. The laboratory determination of the blood cholinesterase levels may be of help in the diagnosis of organic phosphate poisoning. As the true or red blood cell cholinesterase

level of an individual is remarkably constant regardless of health or disease,⁸ it is a better guide than the serum or pseudo cholinesterase as the latter may vary widely in disease and nutritional states.⁹ It must be emphasized, however, that few clinical laboratories are prepared to determine blood cholinesterase levels.* Also, the acute phase of organic phosphate poisoning will not wait for laboratory work. The patient may be recovered or dead before the blood can be analyzed. The blood cholinesterase is useful in proof of poisoning and in following the recovery.

The determination of the blood cholinesterase level is useful in another way. Routine, periodic blood cholinesterase level determination is an excellent way to follow persons who handle the organic phosphates as part of their daily work. A drop in the blood cholinesterase level is an indication of exposure to the organic phosphates. The individual may then be removed from contact with the agents until he has regained near-normal blood cholinesterase activity. This also serves as a method of detecting breaks in the handling procedure that lead to exposure of the personnel. Furthermore, it would be valuable to have a precontact baseline cholinesterase determination for each person who routinely handles these toxic organic phosphates.

The organic phosphates are agents with a true cumulative type of action. The depression of the cholinesterase by them is extremely rapid (within a matter of minutes in cases of severe poisoning), but recovery of the normal body cholinesterase levels is slow. Indeed, it requires approximately four months for the cholinesterase within the erythrocytes to return to normal after severe organic phosphate poisoning. Thus, while an individual may have recovered from an episode of poisoning

insofar as his clinical appearance is concerned, the cholinesterase reserves of the body will not return to normal for months. It is during this period of time that the individual is more susceptible than usual to a second depression of the body cholinesterase by the organic phosphates.

ATROPINE AS AN ANTIDOTE

Fortunately, for this type of poisoning a fairly effective antidote is available. This is atropine, but it is effective only if employed in large quantities. Also, it must be kept in mind that atropine is effective in reversing the signs and symptoms referable to the discharging parasympathetic nervous system only. The drug is not of value as far as the central nervous system or skeletal muscle aberrations are concerned. The initial dosage of atropine that is usually recommended is 2 to 4 mgm. (1/30 to 1/15 grain) given by the intravenous or intramuscular route. This initial dose serves two functions. In the first place, it may succeed in reducing the severity of the symptoms. Secondly, it serves as a therapeutic trial and is a means of proof of whether or not the patient has actually been poisoned by one of the organic phosphates. The patient with organic phosphate poisoning is singularly resistant to the action of atropine. A dose of 2 mgm. is sufficient to dry the skin and mucous membranes and to dilate the pupils of any normal individual. In the organic phosphate poisoned patient, however, such a dose of atropine may have little if any effect. After waiting ten to twenty minutes after the trial dose of atropine, in the absence of a noticeable "atropine effect" the patient may be considered to be poisoned with one of the organic phosphates and more atropine should be given. Huge amounts of atropine may be necessary; 30 mgm. has been required in the first hour of therapy in some instances. In giving the atropine, the effects of the atropine are "titrated" against the effects of the poison. Pupil size, perspiration, and salivation are perhaps the best signs to serve as "indicators" in this titration.

* The author's own laboratory will carry out determinations of the blood cholinesterase on a research basis only. He is interested in cases of organic phosphate poisoning and will be happy to trade cholinesterase determinations for knowledge of cases.

OTHER THERAPEUTIC MEASURES

Atropine is not a therapeutic panacea. The person poisoned with an organic phosphate will be helped by atropinization but may demand other therapeutic measures. The usual cause of death in organic phosphate poisoning is respiratory failure. This is brought about by several mechanisms: the central depression of respiratory activity, paralysis of the muscles of respiration, the accumulation of tracheobronchial secretions tending to block the airway, the aspiration of saliva and vomitus by the comatose patient, and pulmonary edema secondary to anoxia brought about by the above-mentioned factors. Thus artificial respiration may be absolutely necessary.¹⁰ A second main point must not be neglected. This is that many of the organic phosphates may cause poisoning by being absorbed through the intact skin as well as by mouth or via the respiratory tract. The contaminated clothes of the victim must be removed and the body surface washed in an effort to avoid continuing absorption of the agent through the skin. The physician and his aides must avoid contact with the contaminated skin and clothing if they are to remain unaffected by the toxic agent. Also, the patient must be watched even after signs of adequate atropinization appear, for the effects of the atropine may wear off before the organic phosphate in the body has produced its maximum effect or has been detoxified. Repeated atropinization may be necessary.

PROBLEMS IN THERAPY

One of the main problems in the therapy of poisoning with the organic phosphates is iatrogenic in nature. This is the reluctance of the physician to give adequate amounts of atropine because of fear of poisoning the patient with the therapeutic agent. This attitude of the physician is understandable but regrettable. It has resulted in unnecessary loss of life. Gordon and Frye¹¹ have pointed out that the therapeutic dose of atropine 0.5 mgm. (1/120 grain), as traditionally employed by physicians, is but a small fraction of

the lethal dose of the drug. In the adult the lethal dose is in the neighborhood of 100 mgm., approximately 200 times the traditional therapeutic dose, and 50 times the recommended initial therapeutic dose in the case of organic phosphate poisoning. Also, the patient with organic phosphate poisoning is extremely resistant to the action of atropine so that an unusually large safety factor is automatically "built-in" for the physician's convenience.

A second problem, which may be an indirect result of the physicians' goodwill, is posed by individuals taking atropine more or less routinely in an effort to forestall organic phosphate poisoning. The physician may initiate this by giving a prescription for atropine to an individual who handles or works with the organic phosphate insecticides. The physician intends the atropine to be used only in the event of poisoning. However, exposure to the toxic agent and actual poisoning are nearly synonymous terms to many lay persons. The atropine is then taken after the first exposure to the organic phosphate, the expected symptoms of poisoning do not develop, the prescription is refilled, the atropine is used again, and a routine of taking the drug is firmly established. Of course, atropine is not an agent which will prevent poisoning by the organic phosphates so that the prophylactic use of the drug is of no value. Worse still, the atropine, by blocking some of the signs and symptoms of organic phosphate poisoning, may give a false sense of security to an individual with early intoxication, and thus withdrawal from contact with the organic phosphates may be postponed until too late. Personnel who are routinely handling these organic phosphates should be cautioned not to take atropine in a routine, prophylactic manner.

An ever present problem is that of protection of the person handling these toxic agents. Circumstances of exposure to these agents will vary so much that hard and fast rules cannot be established for the conduct of all persons. Exposure by mouth, respiratory tract, and skin must

be avoided in any case. Frequent changes of clothing and daily (at least) showers are in order for those in close contact with the organic phosphates. If the individual works in closed areas, then respirator and protective clothing are essential. If in the open, every effort should be made to stay up-wind from the handling area or during the spraying activity. Even in open areas respirators and protective clothing should be worn by those actually employed in the mixing and filling of tanks with the organic phosphates. Immediate removal of contaminated clothing and bathing of the contaminated individual is indicated. Empty containers used to keep organic phosphate should be burned or buried. Many children have been exposed and some have died as a result of playing with discarded containers. Pilots who spray these agents should be particularly careful. The basic rules for pilots to follow have been well outlined.¹² Pilots should not fly through their own spray-mist. They should always stand up-wind when their airplane is being loaded. The pilots should certainly have routine blood cholinesterase determinations. Many other simple precautions might be mentioned but they have been well discussed by others.¹³

It has not been the author's intention to do more than merely outline the hazard that is posed in the State of Louisiana by the widespread use of the organic phosphate insecticides. Such an extensive literature is available for reference that a complete bibliography would be far too long to append. Only a few worthwhile references are listed. Many cases of organic phosphate insecticide poisoning are to be expected during the current crop spraying season. It is hoped that this brief outline will help physicians in the detection and care of such human victims of the modern war against insect pests.

CASE REPORTS

Brief reports of four cases are presented below. These cases have been selected from many instances of organic phosphate insecticide poisoning that oc-

curred during the crop dusting season of 1956. These cases all occurred in Louisiana, and were investigated by the author. They have been selected to illustrate the principles of treatment, and the problems noted above.

Case No. 1. Fifteen year old white male. This lad was employed as a "mixer" of insecticides. On the particular day in question he was wearing a raincoat, gloves, and a respirator. At 11:15 a.m. he was opening cans of 25 per cent Parathion, and complained of being weak. A few minutes later he was unable to coordinate his movements well enough to hit a chisel with a hammer, this being his way of opening the cans of Parathion. He was perspiring profusely but because of the heat of the day and his heavy clothing this was not considered of importance. At about 11:45 a.m. he was unable to work, was given two 1/150 grain atropine tablets, and was brought to the hospital. In the hospital at 12:10 p.m. physical examination revealed profuse sweating, a marked tremor of the hands, and normal sized pupils which reacted only sluggishly to light. No further atropine was given, the patient was observed for the remainder of the day and that night and was discharged the next day. The blood cholinesterase level was approximately 50 per cent of normal.

Comment: It is difficult to determine just how the exposure took place in this case. The boy was adequately protected. Perhaps the mask leaked or the filter elements may have been exhausted by long use. This is a relatively mild case of Parathion poisoning, but it is just such an individual as this boy who should not be in contact with the organic phosphates until the blood cholinesterase is back to normal levels.

Case No. 2. Thirty-one year old white male. About July 20, 1956, he began spraying Methyl Parathion on crops with his airplane. The insecticide storage tank was in the front cockpit of the aircraft, and this tank developed a slight leak that allowed the Methyl Parathion to leak onto the pilot's leg. The leak was a minor one, but it persisted for several days, and the patient's coverall leg was occasionally wet through with the insecticide mixture. On August 2, the pilot was noted to be "grouchy" by the farmer who employed him. On the next day he noted weakness and abdominal cramping. He landed his airplane and by the time he was on the ground he was nauseated. Vomiting and diarrhea rapidly followed. He took two 1/100 grain atropine tablets on four occasions but vomited them each time.

He was then taken to the hospital and there given atropine intravenously. He was observed in the hospital to have narrow pupils, to be profusely perspiring and salivating, and to have a coarse tremor of the hands. The blood cholinesterase level showed zero activity. One week after the acute episode the blood cholinesterase was only 10 per cent of the normal level.

Comment: The route of exposure is clear in this case. The pilot of an airplane faces an additional hazard due to organic phosphate poisoning. The pupils may be narrowed and accommodation may be impaired making depth and distance judgement poor. This has contributed to many aircraft accidents.

Case No. 3. Forty-four year old Negro. At about 7:00 a.m. this man began spraying a small crop with a TEPP spray. This insecticide was applied with a small hand-sprayer. No protective clothing was worn, and no respirator was employed. Within two hours he began to feel weak and noted that his muscles "twitched". These symptoms were soon followed by abdominal cramps, nausea, and then vomiting. He felt so bad that he stopped work by 11:00 a.m. The patient entered the hospital emergency room by 1:05 p.m. and very shortly thereafter became comatose. Atropine was given and the patient responded. Multiple doses of atropine were given after the initial success. By 9:00 a.m. the next day the patient felt well. The blood cholinesterase level was 5 per cent of normal.

Comment: This is a severe case of organic phosphate poisoning. Without therapy this man might have died. TEPP is the most potent of the organic phosphate insecticides and should never be handled without adequate protective clothing and equipment.

Case No. 4. Twenty year old Negro. This man was employed as a "flagger" in the cotton fields. He was occasionally actually slightly dampened by the spray as it was released from the airplane. A spray of 1 per cent Methyl Parathion had been used for several days and this man had been exposed to the spray for several days. On the day in question, he began work at 5:30 a.m. He felt dizzy in the early morning and had vomited once by 10:00 a.m. Weakness progressed rapidly and he was aware of close objects but could not see distant objects clearly. By 10:30 a.m. these symptoms were so prominent that he was taken to a hospital where atropine in an unknown quantity was administered. He felt better, and after resting for the day he was able to work (at another job on the same plantation) the next day. During the remainder of the day of

poisoning and the next day, cigarettes did not taste good and actually made him feel sick. The blood cholinesterase level was approximately 40 per cent of normal.

Comment: This is a mild case of organic phosphate poisoning. The patient's reaction to cigarettes is a not uncommon history in this type of poisoning. The patient's employer showed excellent judgement in removing him from further exposure to the organic phosphates. An individual in such an exposed job should be provided with a respirator and proper protective clothing.

REFERENCES

1. Cockerham, K. L.: Personal Communication.
2. Parker, G. F., and Chattin, W. R.: A case of Malathion intoxication in a ten year old girl, *J. Indiana State Med. Assn.* 48:491, 1955.
3. McLaughlin, L. A., and Snyder, C. H.: Encephalopathy in a child following exposure to Malathion, *Ochsner Clin. Rep.* 2:37, 1956.
4. Petty, C. S.: Unpublished Data.
5. Agricultural chemicals causing occupational disease in California in 1954, *A.M.A. Arch. Indust. Health* 13:102, 1956.
6. Grob, D., and Harvey, A. M.: The effects and treatment of nerve gas poisoning, *Am. J. Med.* 14:52, 1953.
7. Grob, D.: The manifestations and treatment of poisoning due to nerve gas and other organic phosphate anticholinesterase compounds, *A.M.A. Arch. Int. Med.* 98:221, 1956.
8. Davies, D. R.: Cholinesterases and the mode of action of some anticholinesterases, *J. Pharm. & Pharmacol.* 6:1, 1954.
9. Oka, M.: Studies on the cholinesterase activity of red blood cells, plasma, and synovial fluid with special reference to rheumatic disease, *Acta Med. Scan.* 149:1 (Supp. 293), 1954.
10. Elam, J. O., Clements, J. A., Brown, E. S., and Elton, N. W.: Artificial respiration for the nerve gas casualty, *U. S. Armed Forces Med. J.* 7:797, 1956.
11. Gordon, A. S., and Frye, C. W.: Large doses of atropine low toxicity and effectiveness in anticholinesterase intoxication, *J.A.M.A.* 159:1181, 1955.
12. World Health Organization Technical Report Series, No. 114, Geneva, October, 1955.
13. Protective Measures for Users of Organic Phosphate Insecticides, *Occupational Health Bulletin V*, State of California, Department of Public Health, Bureau of Adult Health, 1956.

LACERATIONS OF THE BIRTH CANAL *†

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It is generally agreed that lacerations of the birth canal are second only to uter-

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ine atony as a major cause of postpartum hemorrhage; therefore, their prevention, recognition, and prompt treatment assume high significance.

Our discussion will be limited to consideration of lacerations of the external genitalia, perineum, vaginal mucosa (including hematomata), and the cervix per se. Tears extending beyond the internal cervical os, and injuries to the urethra and bladder, will be excluded since they warrant separate studies.

HISTORY

Ancient medical writers recognized the importance of preventing lacerations when possible. Hippocrates, about 400 B.C., recommended oily salves and relaxing douches to soften the structures; and Soranus, in the second century, advocated manual support of the perineum. Repair of perineal lacerations was suggested and practiced by Paré and his pupil Guillemeau, in the 16th century. This principle became accepted practice in the middle of the 17th century. It is said that Paré not only advised repair of lacerations, but, at subsequent delivery, he incised the scar so that it would not obstruct delivery. In Zurich, Jacob Rueff, in 1554, is said to have first recorded a case of puerperal hematoma. In 1742, Sir Fielding Ould, the Second Master of the Rotunda Hospital, was one of the first to perform episiotomy. Other famous names of the 18th century are associated with efforts to prevent perineal trauma. Ritgen and Schultze made numerous small incisions at the introitus; while Scanzoni recommended two lateral incisions; and Credé and Tarnier suggested one oblique incision. In 1810, Michaëlis advocated incision of the perineum. That there were contrary opinions is evident in the first American textbook on obstetrics, whose author, Samuel Bard, stated in the fourth edition (1817), that "stitches" in the perineum, "— do more harm than good". Roux, of Paris, is credited with being the first to suture the ruptured female perineum in 1834. The first episiotomy in America was performed in 1851 by V. H. Taliafer-

ro. In 1874, Emmet called attention to the importance of lacerations of the cervix in a paper entitled, "Lacerations of the Cervix as a Frequent and Unrecognized Cause of Disease" (as quoted by Thoms).

GENERAL CONSIDERATIONS

Generative tract lacerations play a much greater role in the etiology of postpartum hemorrhage than is generally recognized. Tears of the clitoris and of the vestibular bulbs may cause serious hemorrhage as may ruptured varices in the vulva and vagina. Perineal and lower vaginal tears may bleed less dramatically. Cervical lacerations, especially those associated with high vaginal tears, may bleed profusely. While all of these lesions are most frequently the result of operative vaginal delivery, it is important to remember that they may also follow spontaneous delivery.

Because continuous bleeding from so-called minor sources is often ignored until the signs of shock appear, such bleeding may be just as dangerous as the sudden loss of a large amount of blood. Figure 1 demonstrates some of the multiple sites of birth passage lacerations.

Factors influencing the incidence and etiology of lacerations of the genital tract are worthy of enumeration: spontaneous and operative deliveries; congenital abnormalities of the maternal soft parts; pelvic contraction; size, presentation and position of the fetus, and the relative proportion of the presenting part to the birth canal; prior scarring from infection, injury, and surgery; the presence of vulvar, perineal, and vaginal varices; abnormalities of uterine action such as precipitate labor and delivery, uterine inertia with resultant prolonged labor, and induced and stimulated labor which may bring about violent labor. Other circumstances are: differences in tissue elasticity and/or friability among patients; tumors; the age of the patient; and the general condition of the patient as determined by exhaustion, dehydration, and the presence of complicating disease. All these factors may exist alone or in combination.

Two important principles in the diag-

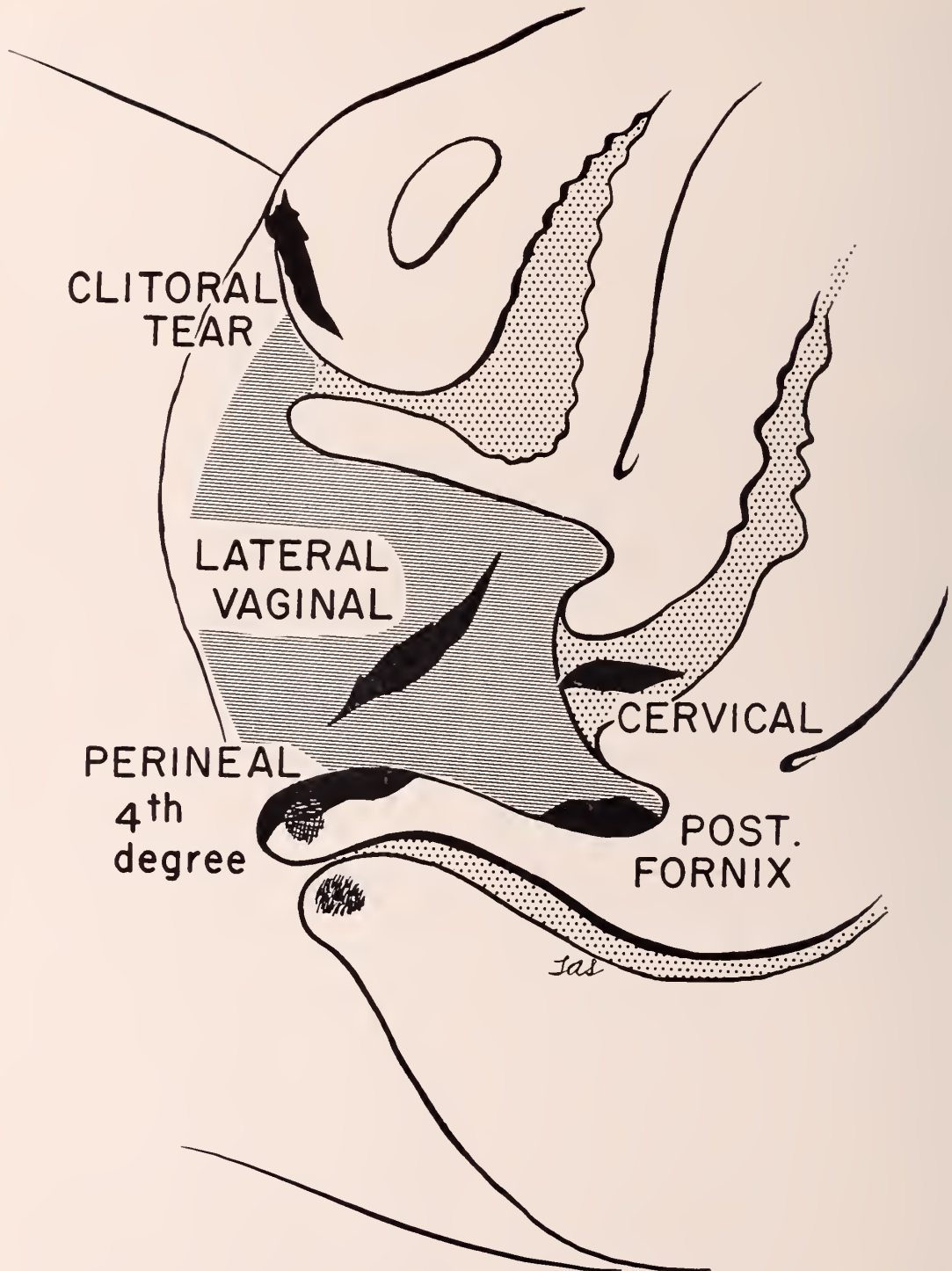


Figure 1. Multiple sites of birth passage lacerations.

nosis of birth canal lacerations are, an ingrained awareness on the part of the physician of their possibility; and the immediate, routine, and meticulous inspection of the entire tract following all de-

liveries. The latter is especially important when dealing with aseptic and nonsterile spontaneous births. Continued vaginal bleeding after efficient uterine contraction demands inspection and re-inspection

of the birth passage. Proper conditions for adequate inspection include: aseptic technique (thus the patient who has "precipitated" must be prepared and draped); standard equipment for repair; an assistant to provide exposure by retraction; and appropriate lighting. Upward displacement of the cervix (after its inspection) by means of a vaginal pack ("tail" or "tagged") will facilitate inspection of the entire vaginal tract (see Figure 2).

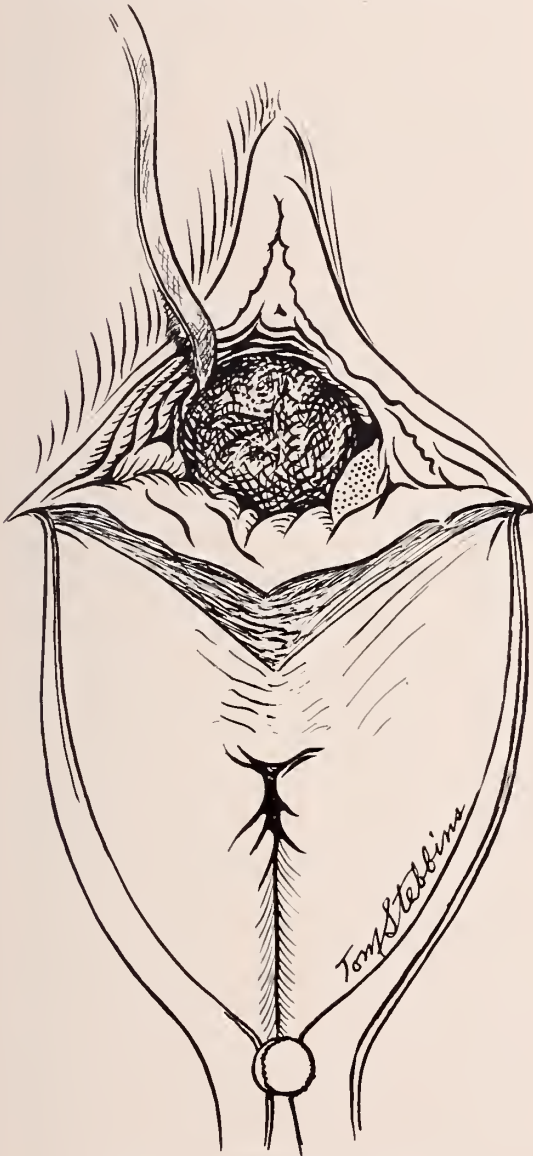


Figure 2. Vaginal pack in place.

In this way lacerations may be seen, and early hematomas can be seen or palpated and treated before they reach serious pro-

portions. Such a pack further serves to keep the contracted uterus out of the pelvis, thus enhancing its contractility and limiting blood loss during any necessary repair.

Complications and sequelae of birth tract tears may embrace postpartum hemorrhage, with its consequent anemia, and predisposition to infection; puerperal infection; chronic local infection such as cervicitis; and the following results of anatomical injury, which in turn produce functional disability: urethrocele, cystocele, rectocele, enterocele, perineal relaxation and gaping (with muscular atrophy in some cases), detachment of the vaginal tube from its paravaginal attachments, descensus uteri, and fecal and/or urinary incontinence.

Consideration of the treatment of any traumatic lesion must include prophylaxis as well as proper anatomic repair. One of the outstanding examples of "preventive surgery" is the obstetrical episiotomy. This concept is not generally accepted since in Great Britain many object to "routine" episiotomy because it converts every delivery into an operative procedure (Kerr and Moir). The attitude toward prophylactic episiotomy in many sections of this country is epitomized by Lull and Kimbrough who write: "It is safely stated that all deliveries with forceps should be preceded by a prophylactic episiotomy and its routine use could well be applied to spontaneous deliveries as well. Certainly any danger of tear demands episiotomy, regardless of the type of delivery. If these principles are applied the introitus is preserved as a nulliparous one and requires episiotomy in any future delivery." Gainey found the vagina to be most vulnerable to injury, and stated that while episiotomy does not guarantee against damage to the levator muscles, it does protect the trigone of the urogenital diaphragm, and prevents unnecessary distention and elongation of the vaginal tube which could lead to disturbance of the attachments of the vagina to its paravaginal tissues. He believes that the latter produces the most

serious and permanently disabling functional damage of all the lower tract injuries.

Proper anatomic repair of all lacerations should be performed immediately after delivery for the following reasons: hemostasis and the prevention of hematomas; the elimination of open sources of puerperal infection; advantage is taken of the increased vascularity and physiologic hypertrophy of the tissues in pregnancy which favorably influence healing; and reduction in the incidence of many of the sequelae. Blood replacement and the administration of appropriate antimicrobial agents, when indicated, are integral parts of the general therapy. Vaginal pack and retention catheter are used as required, and postpartum vaginal constricting exercises complete the general considerations of management.

LABIAL AND CLITORAL LACERATIONS

Because of extreme vascularity, labial and clitoral tears bleed profusely. Their repair should be immediate, and is performed by using fine catgut on an atraumatic needle. Counter pressure with a gauze pad and 'T' binder may be required.

LACERATIONS OF THE PERINEUM

Lacerations of the perineum are the most common of all the tears in the genital tract, at least they are the most generally recognized. We prefer the older classification of these lesions:

1st Degree: Involves the mucosa and the skin with perhaps some fibers of the superficial muscles.

2nd Degree: Involves deeper structures of perineum.

3rd Degree: Involves the sphincter ani muscle.

4th Degree: Involves the anal wall. While this may be cumbersome, it serves to denote the extent of the damage. An episiotomy may extend and become either a third or a fourth degree laceration.

Repair of the first degree tear consists of restoring the mucosa, any deep structures which are involved, fascia and skin. Second degree laceration repair requires suture of the levator ani and any other deep muscles involved. The sphincter ani

muscle must be united in third degree tears, and some make a great point of suturing the capsule as well as the muscle. The anal wall must be sutured in repairing a fourth degree laceration. There are several views with regard to fine points in the technique of fourth degree repair: whether to tie knots in the fascia or in the lumen of the bowel; whether or not to include the fascia in the repair; and whether or not actually to enter the rectal mucosa with the needle and suture material. In our opinion, minutiae of technique are of much less importance than proper anatomic repair.

LACERATIONS OF THE VAGINAL MUCOSA, AND VAGINAL HEMATOMATA

The extent, degree and location of vaginal lacerations will vary according to the circumstances. They may be found in conjunction with or independent of perineal tears. Sulcus tears are frequently seen following forceps deliveries in which the fetal head has been rotated. According to Bubis, "It is impossible to conceive how such damage can be avoided when the soft tissue of the birth canal is ground between two firm, unyielding forces: the fetal skull held by steel obstetrical forceps, and the bony structures of the pelvis". Continuous lock stitch suture would seem to be preferable for hemostasis in the repair of mucosal lacerations, the deeper structures having first been united. Sometimes a vaginal pack may be advisable for counterpressure, but it must be inserted carefully so as not to further traumatize friable tissues; it is therefore suggested that the pack be lubricated lightly with some antibiotic ointment as it is being placed in the vagina. Constant and prolonged pressure exerted by the fetal head upon the vaginal mucosa will ultimately interfere with the circulation and may produce conditions simulating ischemic or pressure necrosis. This state of the tissues plus any type of delivery will result in the frequent production of deep vaginal lacerations and predispose to vaginal hematomata. Some writers believe that there is a higher incidence of hematomata in association with toxemias.

Shulman and his associates state that, "Postpartum hematomas are frequently preventable. Accurate hemostasis during suture of episiotomy, more routine choice of the median episiotomy where anatomically smaller blood vessels are present, avoidance of the pressure necrosis of prolonged labors and the trauma of difficult forceps deliveries are important factors in preventing hematomas."

In our experience most vaginal hematomata occur in the area of the mucosa opposite the ischial spines at the midpelvic plane.

The incidence of vaginal hematomata cannot be estimated accurately for many apparently go unnoticed and must therefore be self limited, but they are probably more frequent than is generally recognized. Almost always they may be detected by routine inspection of the vagina as shown in Figure 2. Manual palpation of the vaginal walls will often detect a crepitant or fluctuant area which has not yet become visible. The larger masses will be purple in color in contrast to the dark red of the remainder of the vaginal mucosa. In treating these hematomata, which we always hope to detect in their incipient stage, we have devised a simple and effective technique which may be epitomized as follows: incision, evacuation and deep suture ligation (Figure 3). With the scissors a 2 to 3 centimeter incision is made in the vaginal mucosa at the apex of the hematoma. A finger is then inserted to assist in the evacuation of clots, and the entire area is squeezed gently as one would expel seeds from a grape. Firm pressure is made over the site until the sutures are placed. One or two, single zero or double zero "figure-of-eight" chromic catgut sutures (depending on the size of the incision) are then inserted so as to include the pelvic cellular tissue if the hematoma is in the upper third of the vagina, the levator ani muscles and fascia in the middle third, and the bulbocavernosus and the vestibular bulbs in the lower third. This simple procedure avoids the long, difficult and often fruitless search for a

bleeding point or points, and precludes the necessity of inserting an infection-producing pack into the hematoma cavity. The rich venous plexus on the vaginal tube communicates freely with the vesical, pudendal, and hemorrhoidal plexuses, which accounts for the free bleeding and hematomata encountered in connection with trauma to the vagina. The area is frequently observed and palpated during episiotomy repair to make certain that bleeding has ceased. Final inspection is made after completion of the episiotomy repair. If the hematoma has been more than about 5 cm. in diameter, a catheter is placed in the bladder and a moderately tight vaginal pack, lubricated with a light coating of an antibiotic ointment, is inserted. The catheter and the pack are removed eight to twelve hours later. The writer has used this method with complete satisfaction over a period of years without recurrence or sequelae. It is felt that these results were achieved only because of early detection and prompt treatment. Antimicrobial agents for systemic action were not used routinely. Vaginal hematomata would seem to occur more frequently in association with forceps rotation of occiput posterior, but since they are found for the most part on the same side as the occiput, we believe that the long continued pressure of the occiput in one posterior quadrant of the vagina is a real contributing cause. Since many small hematomata undoubtedly go undetected and must be self limited, many will wonder why bother with the small ones at all. The underlying principle of treatment is the prevention of the large hematomata (all of which must have a small start). Their much dreaded sequelae are: tissue devitalization and destruction, serious blood loss sometimes accompanied by shock, and consequent morbidity due to these factors, plus infection.

If small immediate hematomata go undetected, the large delayed variety may result. These may be labial or paravaginal according to whether they are located inferior or superior to the levator muscles

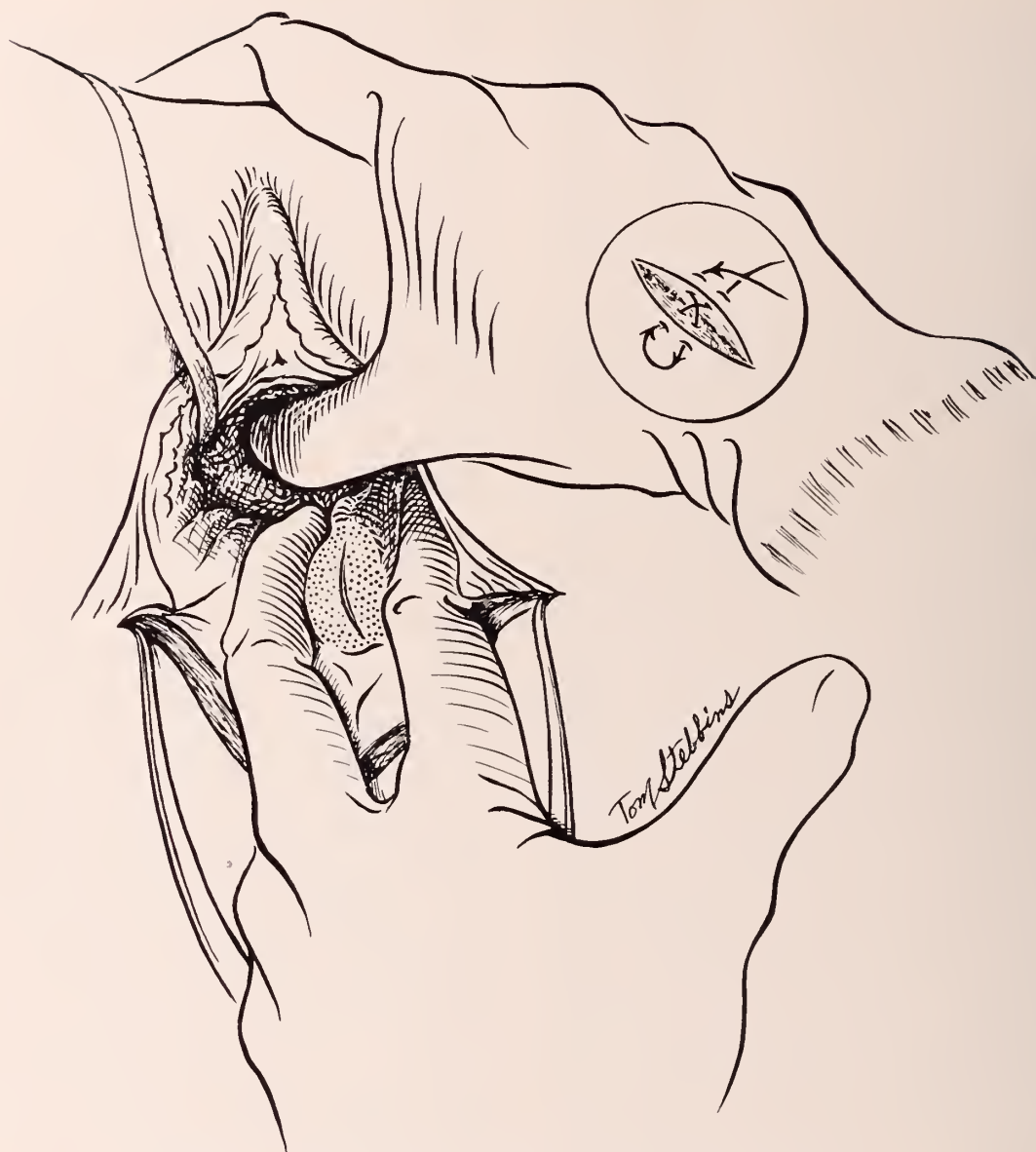


Figure 3. Exposure and treatment of early vaginal hematoma.

and fascia. The labial type may involve contiguous tissues, while the paravaginal form, by upward dissection, extend to the base of the broad ligament and point above the inguinal ligament; or they may even extend to the iliac fossa and upward to the renal area finally reaching the diaphragm. Active treatment is to be instituted if the hematoma is becoming progressively larger. Local incision is used for the labial type, while the abdominal approach is usually preferred for those hematomata developing above the pelvic fascia. Clots are evacuated and hemo-

stasis by suture is secured if bleeding points are discoverable. A tight pack is placed in the cavity and a vaginal pack is inserted for counterpressure. Such packs are left in place for from twelve to twenty-four hours and are removed gradually. As adjunct therapy, blood replacement and broad spectrum antibiotics are essential.

LACERATIONS OF THE CERVIX

"Lacerations of the cervix are of frequent occurrence, and are seldom recognized, even at the time of labor. The tissues are then so soft that, without the

rent has passed beyond the cervix into the vaginal and connective tissues, it can scarcely be detected by mere digital examination, and will escape observation unless an unusual amount of hemorrhage should exist as a consequence." Thus wrote T. A. Emmet (as quoted by Thoms), in 1875. The frequency of occurrence and the association of cervical lacerations with postpartum hemorrhage were noted by this eminent author.

It is considered almost impossible for the normal cervix to withstand the enormous dilatation consequent upon passage of the fetal head without sustaining some injury. Such injury may vary from minor mucous tears to the rare annular detachment. Between these extremes there will be found unilateral or bilateral tears, usually lateral, from less than 1 cm., to those involving the entire cervix; stellate lacerations; and the uncommon anterior and posterior tears. In addition to the factors listed under the etiology of lacerations in general, other factors involving the cervix may be outlined. Forceps applied inside the cervix to act as a dilator may lacerate the cervix; this we trust is now a completely abandoned practice. A cervix which completely effaces before it is more than 3 cm. dilated, may become so thin that with even normal uterine contractions, it may suddenly lacerate rather than dilate. Extensive laceration in such an attenuated cervix should be expected and will be found difficult to repair owing to its very lack of substance. Rupture of the membranes prior to less than 50 per cent effacement of the cervix may predispose to lacerations. It is well to remember that cervical lacerations following precipitate delivery may often be as extensive as those following operative delivery; therefore, it is important to inspect the cervix following every delivery. In the repair of cervical lacerations interrupted or continuous lock stitch sutures may be used according to preference, the latter requiring less time to insert. Probably the most important point in the technique of the repair is to be

certain that the first suture is one half to one centimeter above the angle of the wound in order to secure any vessels which may have retracted. All sutures must include the circumcervical fascia, and some prefer not to invade the endocervix, while others believe this makes little difference. The last suture should approximate the squamocolumnar junction as accurately as possible.

SUMMARY

1. Lacerations of the birth passage are the second major source of postpartum hemorrhage.

2. The two most important principles in the diagnosis of lacerations are: awareness on the part of the physician of their possibility, and the immediate, routine and meticulous inspection of the entire tract. A method to facilitate the latter is described.

3. Treatment of lacerations of the birth canal is considered under prophylaxis, and active measures including hemostasis, anatomic repair, blood replacement, and antimicrobial therapy when indicated. A method of early detection and prompt active treatment of small vaginal hematomata, before they become formidable, is presented.

REFERENCES

1. Bard, Samuel: *A Compendium of the Theory and Practice of Midwifery*, 4th Ed., Collins and Co., New York, 1817.
2. Behringer, F. R.: Cervical and perineal lacerations, *Obst. & Gyn.*, 7:557 (May) 1956.
3. Babis, J. L.: *Puerperal Gynecology*, p. 107, Wm. Wood & Co., Baltimore, 1935.
4. De Lee, J. B.: *The Principles and Practice of Obstetrics*, 1st. Ed., W. B. Saunders, Co., Phila., 1913.
5. Eastman, N. J.: *Williams Obstetrics*, 11th Ed., Appleton-Century-Crofts, Inc., New York, 1956.
6. Findley, Palmer: *Priests of Lucina*, Little, Brown and Co., Boston, 1939.
7. Gainey, H. L.: Postpartum observation of pelvic tissue damage: further studies, *Am. J. Obst. & Gynec.*, 70:800 (October) 1955.
8. Graham, Harvey: *Eternal Eve. The History of Gynecology and Obstetrics*, Doubleday & Co., Inc., Garden City, 1951.
9. Greenhill, J. P.: *Principles and Practice of Obstetrics*, 11th Ed., W. B. Saunders Co., Phila., 1955.
10. Jameson, E. M.: *Gynecology and Obstetrics*, Paul B. Hoeber, Inc., New York, 1936.
11. Kerr, J. M., Johnstone, R. W., and Phillips, M. H.: *Historical Review of British Obstetrics and Gynecology 1800 - 1950*, E & S. Livingstone, Ltd., Edinburgh, 1954.
12. Kerr, J. M. M., and Moir, J. C.: *Operative Obstetrics*, 5th Ed., Williams and Wilkins Co., Baltimore, 1950.
13. Lull, C. B., and Kimbrough, R. A.: *Clinical Obstetrics*, p. 562, J. B. Lippincott Co., Phila., 1953.

14. Morton, Leslie, T.: *Garrison and Morton's Medical Bibliography*, 2nd. Ed., Argosy Bookstore, New York, 1954.
15. Rucker, M. P.: Editorial, *Virginia Medical Monthly*, 79:111 (Feb.) 1952.
16. Shulman, A., Ratzan, W. J., Grossbard, P., and Lawrence, A. C.: Postpartum Hemorrhage, *Am. J. Obst. & Gynec.*, 71:43 (Jan.) 1956.
17. Smout, C. F. V.: *Gynaecological and Obstetrical Anatomy*, 2nd Ed., Edward Arnold & Co., London, 1948.
18. Temkin, O.: *Soranus' Gynecology*, The Johns Hopkins Press, Baltimore, 1956.
19. Thoms, Herbert: *Classical Contributions to Obstetrics and Gynecology*, Chas. C Thomas, Springfield, 1935.
20. Torpin, R.: *A Treatise on Obstetric Labor*, Augusta Obst., & Gyn., Book Co., Augusta, 1948.

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REPORT FROM THE TUMOR REGISTRY, CHARITY HOSPITAL OF LOUISIANA AT NEW ORLEANS, 1948 - 1955

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NEW ORLEANS

In June, 1953, the Tumor Registry of Charity Hospital of Louisiana at New Orleans which had been established in October, 1947, was reorganized and expanded. This was accomplished through the cooperation of the sponsoring agencies consisting of the American Cancer Society, Louisiana Division, the Louisiana State Department of Health, Charity Hospital, and the Medical Schools of Tulane and Louisiana State Universities. Technical advice and assistance was provided by our consultants at the Statistical Research Section of the Medical and Scientific Department of the American Cancer Society. The governing board of the Registry pres-

ently consists of representatives from the institutions mentioned above and from the Louisiana State Medical Society.

The Registry has abstracted and coded records of all patients with malignant disease retroactive to January 1948, and has recorded all new accessions since then. This information together with the annual informational follow-up has been transferred to IBM punch cards. The original Registry, which merely accumulated a simple identification file of cases together with limited follow-up for a selected group, has been developed and streamlined into one which provides easily accessible material that can be massed for analysis. Thus, the tedious task of reviewing thousands of case histories has been reduced to summarizing the accumulated data through electric machine accounting. A portion of this data relative to end results was used at the Third National Cancer Conference held in Detroit this past June and is incorporated in the report "Cancer at Mid-Century".² More recently the Registry became one of eleven hospital registries in the country cooperating with the Cancer Chemotherapy National Service Center of the National Cancer Institute in studies directed toward the accumulation of detailed information of large groups of cancer cases as a base line for evaluation of the results produced by cancer chemotherapeutic agents. In addition, the medical staff at Charity Hospital and various persons concerned with cancer control on a local, state, and national level have been provided with information for teaching and research. Also, this prototype Registry has offered advice and assistance to other hospitals in the state in establishing their own registries.

In general, the operation and organization of the Registry is patterned after that described in the "Manual for Registries and Cancer Clinical Activities of the American College of Surgeons".⁶ It has been necessary to adapt the program to the particular situations that arise at Charity Hospital and this will be reported subsequently.

From the Tumor Registry of Charity Hospital of Louisiana at New Orleans.

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The authors wish to acknowledge the assistance of the Statistical Research Section, Medical and Scientific Department, of the American Cancer Society and in particular, the help and advice of B. Aubrey Schneider, Sc. D. and Abraham Ringle of the above department in the preparation of this study.

STATISTICAL ANALYSIS

From this collection of information of cancer illness at Charity Hospital for the period 1948-1955, a statistical analysis was made by our consultants at the Statistical Research Section of the American Cancer Society. The forthcoming presentation is based on this study.

Total Cases: A total of 12,488 cases have been diagnosed during the period 1948-1955. For these eight years an average of 1,561 new cases were diagnosed per year. This figure will be slightly larger since the number of cases in 1955 represents an incomplete coverage as not all of the cases for that year have been abstracted and coded in time for analysis.

Race and Sex: The distribution of cases for white and non-white represents 51 per cent and 49 per cent respectively, which indicates a slightly larger percentage of white cases, although the ratio for hospital admissions and clinic visits in 1953 was 1 white to 2.2 non-white. The large number of non-white cases on Pediatrics and Obstetrics weights the total number of admissions toward the non-white group. The number of admissions in 1953 to Obstetrics was 1,990 white women compared to 13,155 non-white; the Pediatric admissions were 1,350 white to 2,796 non-white.⁶ It must be realized that these patients are in the younger age groups and do not supply a proportionate number of cancer cases.

The ratio of male to female cancer cases was 53 per cent to 47 per cent. The large number of skin cancers treated at this hospital influences the totals for both male and white cases as most of the skin lesions occur in the white male. A total of 1,785 skin cancers were diagnosed and treated at Charity Hospital during 1948-1955. The numbers of white and non-white skin cases were 1,654 white to 131 non-white; 1,074 white males to 61 non-white males, and 580 white females to 70 non-white females. In 1947, the total incidence rate of cancer in New Orleans for whites as reported in the Public Health Service monograph on "Cancer Illness in New Orleans"⁸ was 69 per cent greater than for

non-whites (434 per 100,000 compared with 257). Again, the greatest difference between whites and non-whites occurred in cancer of the skin. When this factor was eliminated, the rate was reduced from 69 per cent to 39 per cent. In comparing the sex difference the opposite is true since in 1947 the recorded cancer incidence rate in New Orleans among females in each race exceeded that for males; whereas at Charity Hospital there were more cancer cases in males than in females. This may be attributed to the proportionately large number of skin, respiratory and digestive cancers developing in men.

Site: The largest number of cancers in the female occur in the uterus (including cervix), breast is second with approximately half as many cases, which is of interest and local importance (Figure 1).

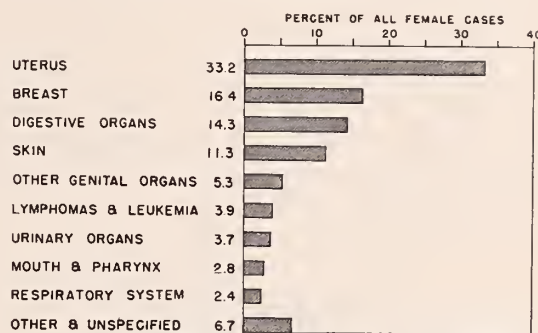


Figure 1—Percent of female cancer cases by site.

In many reports breast cancer is the most common female carcinoma. In 1947, the survey in New Orleans showed the breast cancer incidence to be 43 per 100,000 population as compared to 41 for all uterine cancer.⁸ In Connecticut for the period 1935-1951 there were 9,037 cases of cancer of the female genital organs and 9,299 cases of female breast cancer. In addition, the incidence of breast cancer compared to uterine cancer as expressed in percentage is 21.7 per cent to 18.9 per cent, according to both the American Cancer Society and the ten city survey conducted by the United States Public Health Service.^{7, 3} Several reasons have been advanced why this is not so at Charity Hospital. This reversal may be due to the availa-

bility of x-ray therapy at Charity Hospital, for many patients with cervical and uterine carcinoma are referred here for treatment by physicians and other hospitals throughout the state. It may also be due to the fact that cervical carcinoma is more common in the colored race. The New Orleans survey in 1947 showed a comparative incidence of 85.8 per 100,000 for uterine carcinoma in whites to 99.2 in non-whites. In the ten city survey conducted by the United States Public Health Service in 1947, it was observed that the high rate of genital cancer in the negro female is due almost entirely to cancer of the cervix with an incidence of 39.1 per 100,000 for whites to 78.8 for negroes.³ In all probability both factors, referral of patients for x-ray therapy and the high incidence of cervical cancer in the colored female, contribute to the explanation of the high incidence of cervical cancer at Charity Hospital.

In males, digestive organ malignancies rank first with respiratory system in a close second (Figure 2). In other areas prostatic cancer forces male genital cancer into second place.¹

Comparison of the sexes and sites shows

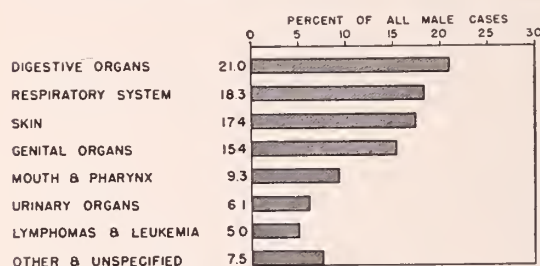


Figure 2—Percent of male cancer cases by site.

that in males the respiratory system is 18.3 per cent and in females 2.4 per cent. In women, cancer of the uterus, breast and digestive organs represented about 64 per cent of all female cancer, while among the men 72 per cent of all male cancer was from digestive organs, respiratory, skin and genital organs (Figures 1 and 2).

Microscopic Confirmation at time of Diagnosis: It is gratifying to find that malignancy was confirmed microscopically in 87 per cent of the cases over the eight

year period. This percentage is very high when compared with data from other areas: New York State, exclusive of New York City, 1952, 71 per cent; Chicago in 1947, 72 per cent; Pittsburg and Detroit in 1947, 74 per cent, respectively; and for Connecticut in 1950 for cases reported by hospitals only, 86 per cent. The figure for microscopic confirmations at Charity Hospital has gradually risen from 85 per cent in 1948 to 91 per cent in 1955.

Stage of Disease at Time of Original Diagnosis: Localized malignancies in the white were much higher than in the non-white (Figure 3). Localized cancer was diagnosed in the white in 50 per cent of the cases and in only 30 per cent of the non-white. The large number of skin cases for white, which fall into the localized stage, influences the ratio of white and non-white. Most frequently diagnosed in the early stage were cancers of the skin, buccal cavity and pharynx, male genital organs and urinary tract (Figure 4). Those of the digestive and respiratory organs were least frequently diagnosed in the early stage. This is understandable since these sites are less accessible and seldom produce early symptoms.

The yearly increase in localized disease in the white group was much more apparent than in the non-white for all cases combined. The question was raised as to whether this reflected a failure of the public education programs of the concerned agencies or whether this was a result of other factors. Studies duplicating Figure 3 were performed for lung, stomach, breast, and cervix. In the latter two sites there was a definite increase in localized disease during the course of the study for both races. With lung and stomach, the percentage of localized disease remained stationary for both races. Thus we know no satisfactory explanation for these particular observations.

Sex and Age: The average for males is 61 years and for females is 55 years. Among males, the rate remains low until the age of 35 when a sharp rise to a peak at 65 years occurs, after which the rate

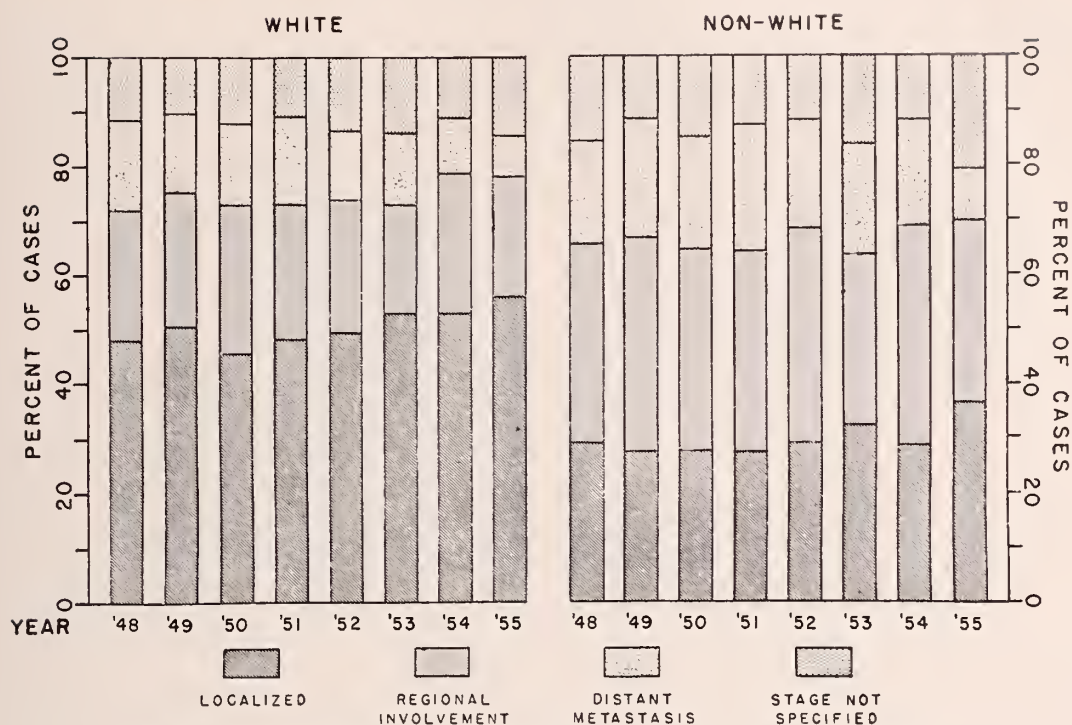


Figure 3—Stage of disease at diagnosis by race and by year of diagnosis.

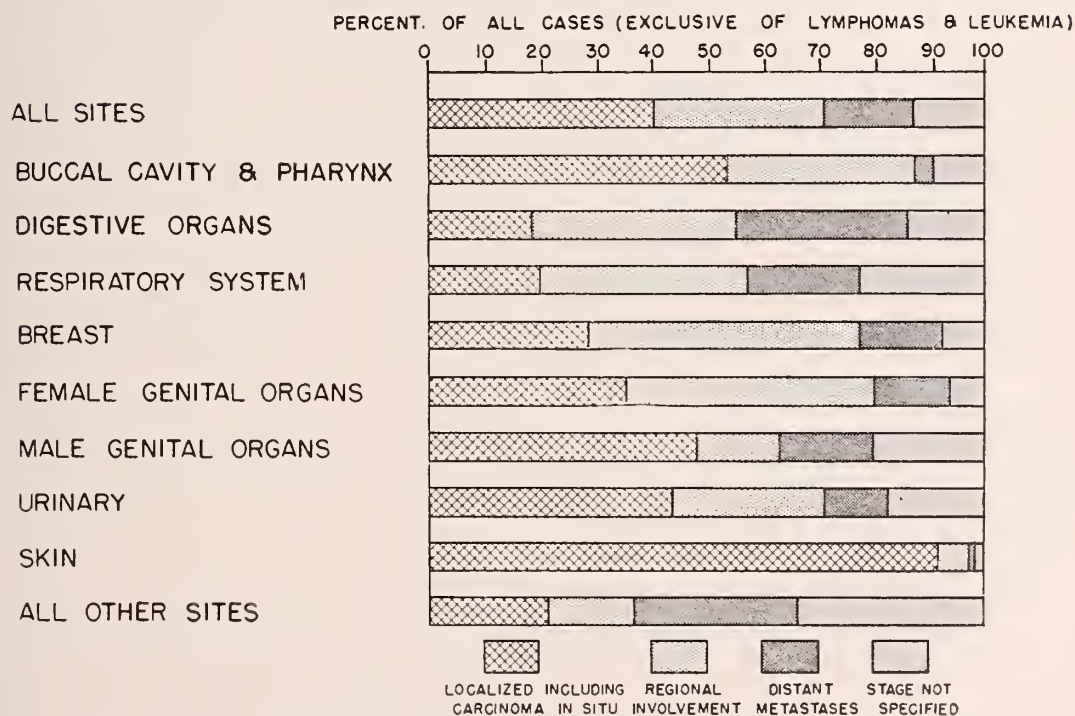


Figure 4—Stage of disease at diagnosis by site.

drops. On the other hand, among females the rise begins about the age of 25, ten years earlier than the males. A peak occurs between the ages of 55 and 64

though this is not significantly higher than the figures for ages 45 through 54 years (Figure 5). There is a less gradual decrease in females after the peak than

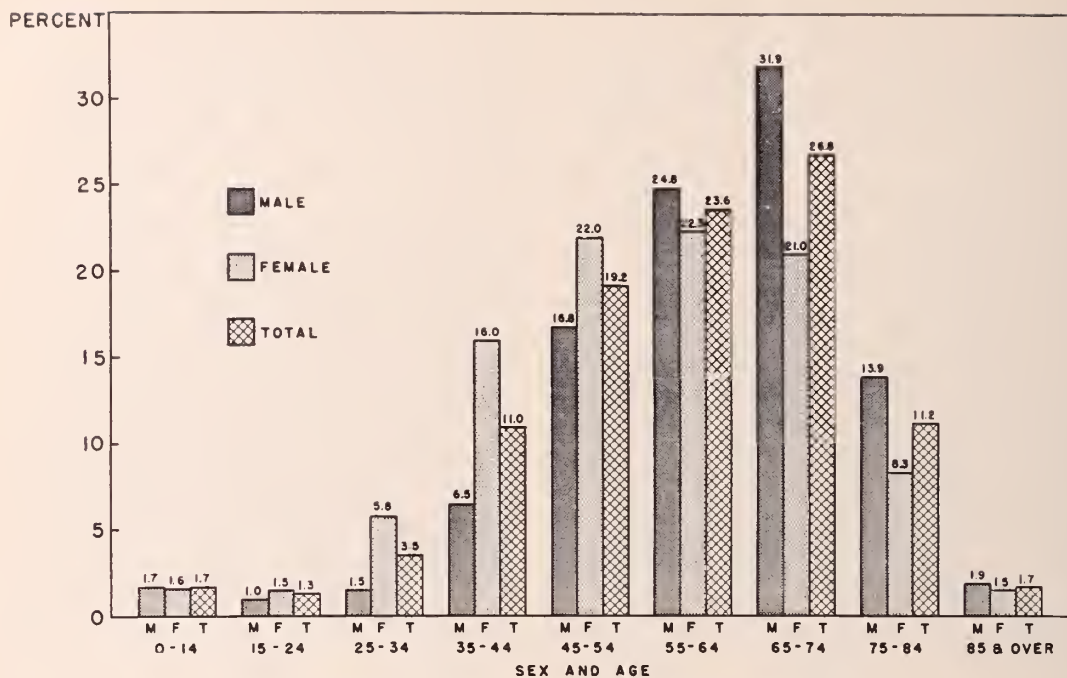


Figure 5—Percentage distribution of cancer cases by sex and age.

in males. Very little variation according to sex occurs in the young up to the age of 14 or in the aged above 85.

Survival: Total survival rates by sex reveal 33 per cent of the females survived as compared to 23 per cent for males. Five year survivals were 33 per cent for white as compared to 23 per cent for non-whites. For all cases the five year survival rate was 28 per cent which is the same as was reported by Connecticut for the period 1940-1944. Localized cases had a 53 per cent five year survival as compared with 22 per cent for regional metastases and 2 per cent for remote metastases (Figure 6). This emphasizes

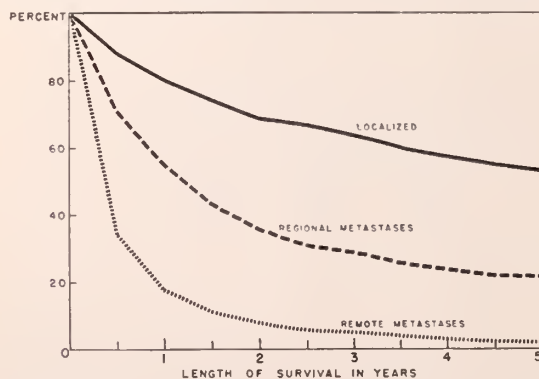


Figure 6—Survival of cancer cases by stage at diagnosis.

the importance of early diagnosis in successful treatment of cancer. Five year survivals ranged from a high of 65 per cent for skin to a low of 7 per cent for

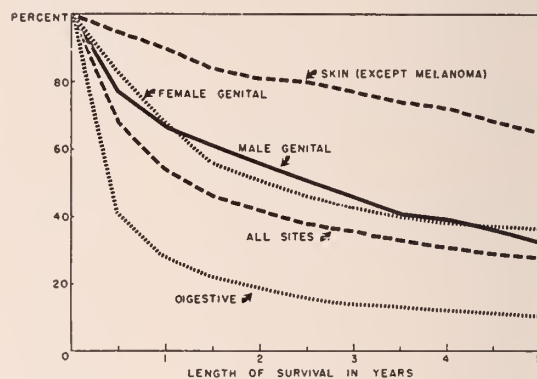


Figure 7—Survival of cancer cases by site.

leukemia and lymphoma (Figures 7 and 8).

DISCUSSIONS

This first over-all statistical analysis of the Registry has provided information concerning the size and nature of the cancer problem in Charity Hospital. Such a medical audit may be used for evaluating the progress over a period of years, pointing out the areas where improvement can be made in the treatment of cancer. From this analysis it would appear that im-

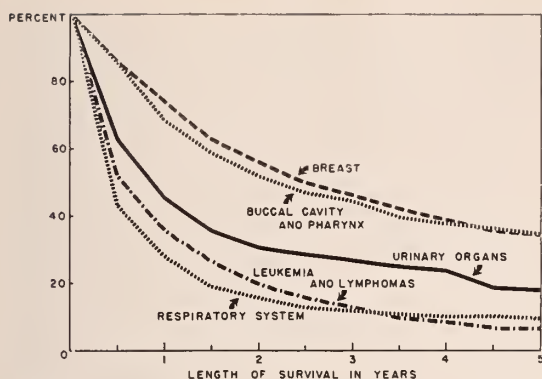


Figure 8—Survival of cancer cases by site.

provement may be made in the following areas:

Early Diagnosis: A larger percentage of patients should be diagnosed within early stages of the disease. Future progress in this direction would indicate continued efforts in education of the laity and increasing awareness on the part of the physician for early detection and improvements in the method of diagnosis.

Follow-up: In order to compute survival rates, which is essential in evaluating the results of diagnosis and therapy, follow-up for the lifetime of the patient is necessary. In this study the number of cases eligible for a possible five-year or more survivorship were adequately followed; whereas in those having been diagnosed and treated for a shorter period of time, only 78 per cent have been adequately followed.

Although the Registry is responsible for

informational follow-up, which is merely obtaining information as to the condition of the patient at a given time, there is need for extended service follow-up in order to keep the patient under medical supervision. Service follow-up would insure the following: (1) keeping suspected cases of cancer under observation until a definite diagnosis has been established; (2) seeing that the diagnosed patient reports for treatment, and (3) assuring that the treated patient reports for periodic check-ups in order to detect early any evidence of recurrence.

Finally it is hoped that the Registry, with a periodic evaluation of case material, will be a guiding force in delineation of deficient areas in cancer diagnosis and therapy.

REFERENCES

1. Cancer in Connecticut, 1935-1951. Connecticut State Department of Health, Hartford, Connecticut, 1955.
2. Cancer at Mid-Century: Third National Cancer Conference, Detroit, June 4-6, 1956.
3. Dorn, Harold F., Ph.D. and Cutler, Sidney J., M. A.: Morbidity from Cancer in the United States. Public Health Monograph No. 29, United States Printing Office, Washington: 1955.
4. Hubly, James W. and Schneider, B. Aubrey: Calhoun County Medical Society Central Cancer Registry. A Statistical Analysis. *J. Michigan State M. Soc.* 55:423 (April) 1956.
5. Manual for Registries and Cancer Clinical Activities. American College of Surgeons, 1955.
6. Report on Charity Hospital of Louisiana at New Orleans—July 1, 1953 to June 30, 1954.
7. Statistical Research Section, American Cancer Society, December, 1953.
8. Warran, Irving I.: Cancer Illness Among Residents of New Orleans, Louisiana. Public Health Service Publication No. 67—United States Government Printing Office Washington, D. C.: 1951.

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THE PHYSICIANS AND THE LOUISIANA STATE DEPARTMENT OF PUBLIC WELFARE

There are many things about the Louisiana State Department of Public Welfare and its medical care program that the physicians of Louisiana need to know. The understanding of its operations and our relation to it will lead to better care for the indigent, a saving for the taxpayer, and will help to maintain the physician in a position where he can prevent this care from gradually developing into a system of state medicine. To orient our-

selves in the realization of the magnitude of the problem it must be viewed in the light of figures which are an eminent concern to us as citizens and as physicians.

The population of Louisiana is approximately 3 million. Through the Welfare office 110 million dollars, more or less, is paid to the beneficiaries of that department who number about 240 thousand. Fourteen million dollars a year are being paid to these beneficiaries for medical care. Approximately 30 per cent of this has been paid to fourteen hundred doctors in the State for their part in furnishing this care. Some seven thousand of the total number of beneficiaries receive special grants for medical care, amounting to approximately \$22 a month.

It is clear, therefore, that we are involved in an extensive and important undertaking. Down through the ages, the indigent have been given medical service by the physicians. During a great part of our medical past this care of the indigent has involved principally the time and effort of the physician. In the present year, care entails a great deal more than the services of one person, namely, the physician, and has become a most involved and expensive commodity. At this point the State has stepped in with the resources supplied by taxation to provide the necessary medical care for the indigent, and to pay for the employment of physicians who furnish it. This brings a third party into the patient-physician relationship. While not pleasing to the traditions of medicine as inherited from the past and confirmed in the present, it has been accepted by the profession to be applied in this limited field and thought to be in the best interests of the patient.

It is obvious that physicians' service could be supplied by the Department of Public Welfare on a per capita basis, or on a clinic basis, or on a free choice of physician and fee for service basis. We consider it is greatly to the credit of the Department that they have chosen the latter, and except under certain special conditions the welfare recipient chooses his

physician so far as office and home care is concerned. Hospitalization in our State is provided through the system of State charity hospitals, as is well known.

The aims of the Welfare Department and of the medical profession are in the interests of the sick indigent person. It is desirable that the relationships between the welfare agencies and practicing physicians should continue to be cordial and on an ethical level in keeping with their aspirations. In the furtherance of such projects the Department of Public Welfare of the State of Louisiana has come to the Louisiana State Medical Society and is requesting our cooperation in various phases of their program. They request that the State Society approve the establishment, both past and future, of medical examining boards in the Parishes wherever possible. They request that a Medical Advisory Board be approved and appointed and that the "vendor payment plan" of paying physicians for their services be approved. The latter means that in the future the physician will be paid by the Department of Public Welfare directly; whereas in the past it was the responsibility of the patient to pay the physician with the monies furnished him by the Department. The Executive Committee of the Society has approved this threefold plan. Medical Examining Boards are now operating in forty-four Parishes, and the need for their service is just as keen in the other twenty. The functioning of these boards relieves the individual physician, who is often the family physician, of the undivided responsibility of saying who should benefit from the welfare program and what medical care they should receive. Their operation through a period of years would make possible rehabilitation in a

certain proportion, and reduce total medical expense. The function of the Medical Advisory Board will be to give professional advice in standardization procedure and planning.

The advantages of the "vendor payment plan" will be obvious in that the physician will know that his patient is a welfare recipient; will know approximately what the wishes of the Welfare Department are for the patient's care; and will know the limitations of his position. It is anticipated that this system of payment will come into operation slowly, but it is recognized that a sharp stimulus to its establishment exists in the expanded social security disability payment program of the federal government, which is expected to be operating on July 1, 1957.

It is fully recognized that the average physician's mind is preoccupied with disease processes and emotional reactions of sick people. He transfers his thinking with difficulty into fields of legal record keeping, trick questions, and crossed answers. Involved procedures within this red tape are obnoxious to him. The Department of Public Welfare, however, has promised to make the processes that pertain to records as simple as possible consistent with good professional and business practice.

This program of the Department of Public Welfare of this State presents another situation in which the cooperation of the medical profession will contribute towards the public good. At the same time, it will assist in maintaining the profession in a position where it will be able to provide good medical practice and prevent bureaucratic domination. Under such conditions, we will be able to continue as free physicians and avoid state medicine.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF THE PRESIDENT

The Medical Society year, now concluding, has

been far from uneventful, and some of these events may well influence the future complexity

of our practices.

Almost at the beginning we were enmeshed in hearings and conferences in an effort to prevent passage of bills to license chiropractors. These efforts were successful, but left us uncomfortably aware that the victory was only a delaying action. Regardless of the facts that we were scientifically justified and morally obligated to oppose this legislation legalizing quackery, it was apparent that most legislators and many doctors were not aware of the true nature of chiropractic. Renewed and reinvigorated efforts at professional, public and legislative information about the nature and aims of chiropractic must be carried out NOW. To wait until just prior to the legislative session, as we have been wont to do, is to court defeat of our efforts. The Society owes a debt of gratitude to the Public Policy and Legislation Committee, particularly the Baton Rouge members, for their alertness and untiring efforts in its behalf.

During the past few months, the Medicare Program of military dependency care has become effective. This was preceded by numerous conferences, and meetings by officers and the Committee on Federal Medical Services. As a result, a contract and fee schedule between the Louisiana State Medical Society and the Defense Department were negotiated, in Washington, with the Continental Service Life and Health Insurance Company as our fiscal agent. The fees agreed on, for a trial period of six months, were for a very liberal maximum allowable. Members have been cautioned against charging this maximum allowable if it is greater than their average fee. To do so will certainly result in a downward revision of the fee schedule. This Medicare Program, while encouraged by the AMA, to reduce the load of dependent care by military installations, and thus reduce the need for expanded defense department personnel and facilities, is indeed true federalized medical care. It may well be an entering wedge for expanded federal medical care to increasing segments of the population and its operation and future is of direct concern to every practicing physician.

Recently, at the request of the Louisiana Department of Welfare, an Advisory Committee to the Welfare Department has been authorized and is being created. Also a vendor system of fee for services rendered is to become effective, with the Committee on Medical Indigency advising and establishing a fee schedule. This is not an expansion of State Welfare Medical Services, but a better controlled and coordinated operation, in which the Medical Society has been asked to, and has accepted, an increasing advisory contact with the policies and operation of the medical division of the Welfare Department.

At the time of this writing, plans are being

formulated in Louisiana to implement a nationwide polio vaccination program.

Dr. Matas' "History of the Louisiana State Medical Society" has been published by the Committee of the Society under the chairmanship of Dr. Isidore Cohn, Sr. This has been a monumental task in accumulating, editing and publishing this book. It is urged on each member of the Society that he purchase a copy, not only because of its historical importance, but because the Committee has reported the need of the financial aid from sale of the books.

Civil Defense is increasingly becoming a way of life. Doctors are not alone in their inertia and apparent disinterest in the problems involved. It is our opinion that the State Society should take a more active part in indoctrinating and training not only doctors, but related personnel in the medical aspects of disaster planning.

We have officially visited Lake Charles, Monroe, Alexandria and Shreveport during the year, and are grateful for the efforts of all members and particularly the members and chairmen of the various committees. Particularly to be commended for efforts in behalf of the Society are Dr. I. W. Gajan (Committee on Federal Medical Services), Dr. H. H. Hardy (Committee on Medical Indigency), Drs. Arthur Long, Henry Jolly and Jos. Sabatier (Committee on Public Policy and Legislation). All committees have functioned faithfully, but these in particular, have had more than their share of problems. It has been a great privilege to serve as President.

RECOMMENDATIONS

1. Constant surveillance and evaluation of the Medicare Program.
2. Renewed and invigorated efforts of public and professional education regarding the evils of chiropractic.
3. Increased leadership in planning and disseminating, to the medical profession and allied fields, a knowledge for management of casualties in major disaster.
4. Efforts to further the sale of Matas' "History of the State Medical Society" to all of the members.

PAUL D. ABRAMSON, M. D., President

ANNUAL MEETING

This is to remind you again that the annual meeting of our Society will be held on May 6, 7 and 8, at the Roosevelt Hotel in New Orleans.

We would like to see a record attendance, and especially so to do honor to and show our appreciation to, Dr. Dwight H. Murray, President of the American Medical Association who will grace our meeting as the annual orator for the opening session, to which the public is invited, on Monday night in the University Room of the

Roosevelt Hotel. Dr. Murray will also address the House of Delegates on Monday morning.

Another added attraction will be on Monday, May 6, between 1:00 and 2:00 p.m., in the International Room when a closed-circuit televised seminar will be presented for the first time on the program, of five State Societies at the same hour. The participating states will be Florida, Kansas, North Carolina, Oklahoma and Louisiana. The program will originate in Chicago and is being produced by Smith, Kline and French Laboratories in cooperation with the five State Societies and the AMA. We feel sure you will not want to miss the opportunity of seeing such a telecast.

We will also have on the program seven out-of-state guest speakers who will, we feel sure, bring you messages of a scientific nature which will be worth taking home for use in your daily practice.

Don't forget the annual banquet for all registered members and their wives to be held in the International Room on Wednesday night at 8:00 o'clock.

Don't disappoint us. Let us see you at this—your meeting.

C. Grenes Cole, M. D.
Secretary-Treasurer

Dr. Aims McGuinness Says *

GOVERNMENT SET TO BOLSTER PRIVATE MEDICAL INSURANCE

The Government has no intention of taking over prepayment health insurance but it's ready to give a push to private and nonprofit organizations seeking to extend coverage to the 60 million Americans who have no health insurance at all.

This was the gist of Dr. Aims C. McGuinness's message to representatives of medicine, labor, management, and government in a round-robin discussion of the mounting costs of medical care. The new medical affairs assistant to Secretary Marion B. Folsom of the Department of Health, Education and Welfare was the Government's spokesman at the session, sponsored by the Medical Society of the State of New York as part of its sesquicentennial program.

Gaps in Coverage

Despite progress in broadening voluntary prepayment, Dr. McGuinness said, "there are impor-

tant gaps and limitations in the coverage," especially for the aged, farmers, small-factory workers, the self-employed, and those "considered substandard risks because of chronic illness or disability." Only 10 million persons—or one-seventeenth of the population—have any kind of "major medical" insurance.

For this reason, he said, the Administration is supporting legislation—similar to its proposals last year—to ease antitrust regulations so that some 700 private or nonprofit insurance organizations can pool their resources and experience to develop better coverage. Dr. McGuinness said:

"Because large insurance companies are generally able to undertake necessary experimentation and expansion on their own this program would be limited to companies doing less than one per cent of the total commercial health insurance business, or to voluntary associations such as Blue Cross and Blue Shield."

While not commenting directly on this new legislative proposal, Dr. Elmer Hess, former president of the AMA, said the medical profession still stands four-square against any "Federal compulsory medical care programs such as the various Wagner-Murray-Dingell bills."

Favors 'Free Choice'

The profession, however, is by and large accepting the Government's "Medicare" program for servicemen's dependents, Dr. Hess said. "We are attempting to make it a success because it offers free choice of physician.

"But we have more or less opposed certain other plans under which a third party comes between the physician and the patient," he added. "It is obvious why this is true, for it is axiomatic that the fellow who pays the bills, calls the shots. If free choice goes out the window, compulsion comes in. We are opposed to compulsion."

Speaking for labor, James A. Brindle, United Auto Workers' social security director, quoted Benson Ford, vice-president of the Ford Motor Co., as saying: "Inclusive health care should provide to every American citizen, at a cost he can reasonably meet, all the services necessary to keep him healthy and productive. . . . I am not in the least worried about the so-called threat of socialized medicine."

* Reprinted from Medical News.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

POSTGRADUATE COURSE IN INTERNAL MEDICINE

AMERICAN COLLEGE OF PHYSICIANS

Shreveport, Louisiana

A postgraduate course in Internal Medicine has been arranged by the American College of Physicians and will be offered by Louisiana State University School of Medicine, Postgraduate Division, May 20-24, 1957, at Shreveport, La. in the Confederate Memorial Hospital.

Officers of instruction will consist of a guest faculty and members of the LSU School of Medicine faculty. In this course, no attempt will be made to review or even touch upon all fields of internal medicine. Rather it is intended to afford discussion of certain phases which are of current medical importance, as well as problems which ordinarily are not considered in postgraduate courses in Internal Medicine. Lectures are to be supplemented by case presentations or ward rounds.

Where facilities are available these courses sponsored by the American College of Physicians are open to nonmembers with adequate preliminary training. Registrations from nonmembers of the College must be received at least three weeks in advance of the opening of the course.

Fee for the course: Members of the American College of Physicians, \$30.00 per week; nonmembers \$60.00 per week.

Inquiries should be addressed to Mr. E. R. Loveland, Secretary, 4200 Pine Street, Philadelphia 4, Pa.

HARVEY TERCENTENNIAL CONGRESS AND AMERICAN MEDICAL ASSOCIATION IN TRANSATLANTIC HOOK-UP

Two of the world's great medical confraternities—the physicians of the United States and the United Kingdom—will be linked across the Atlantic via the new underseas cable on Wednesday, June 5. Thus, for the first time in history, two medical conventions on different continents will be in direct, two-way communication.

Arranged by Smith, Kline & French Laboratories, Philadelphia pharmaceutical manufacturers, the hook-up will join the American Medical Association, then in annual session in New York, and the Harvey Tercentenary Congress, convened in London to commemorate the 300th anniversary of the death of William Harvey, the English physiologist who first described the circulation of the blood.

Fittingly, doctors both in New York's Carnegie Hall and London's venerable Great Hall of the Royal College of Surgeons will discuss: "The Results of Cardiac Surgery."

Invitations will be sent members of the medical profession to attend the Carnegie portion of the meeting, which gets underway at 10:15 a.m. (EDT).

In New York, the participants will include Drs. Michael E. De Bakey, Baylor University, chairman of the American panel; Alfred Blalock, Johns Hopkins University; John H. Gibbon Jr., Jefferson Medical College; Frank L. A. Gerbode, Stanford University, and George E. Burch, Tulane University.

TEACHERS OF ESOPHAGEAL SPEECH NOW DISTRIBUTED OVER THE STATE

Trained teachers of esophageal speech are now located in every section of Louisiana as a result of a course offered for speech therapists by the division of Graduate Medicine at Tulane School of Medicine. The course was also sponsored by the Vocational Rehabilitation Division of the State Department of Education and the Louisiana Division of the American Cancer Society.

Louisiana speech therapists who took the course are: Miss Nell Allen, Alexandria; Mrs. Betty Peavy, Lake Charles; Mrs. Julia Arnold,

Baton Rouge; Dr. Harold Starbuck, Natchitoches, and Charles W. Campbell, Hammond.

Qualified teachers of esophageal speech already teaching are Miss Francis Barnes, Monroe; Waldo Wasson, Lafayette, and Dr. Jeannette Laguaite, New Orleans.

Faculty participants in the Tulane course, which was offered the week of March 11, were Dr. Harold G. Tabb, associate professor of otolaryngology, Dr. Russell R. Monroe, associate professor of psychiatry, and Dr. Laguaite, assistant professor of speech pathology. Guest lecturers were William Waldrop, speech therapist from St. Luke's hospital in Chicago, and Edward Tuescher, executive secretary of the International Association of Laryngectomees.

ANNUAL ASSEMBLY IN OTOLARYNGOLOGY

The Department of Otolaryngology, University of Illinois College of Medicine, announces its Annual Assembly in Otolaryngology from September 30 through October 6, 1957. The Assembly will consist of an intensive series of lectures and panels concerning advancements in otolaryngology, and evening sessions devoted to surgical anatomy of the head and neck and histopathology of the ear, nose and throat.

Interested physicians should write direct to the Department of Otolaryngology, 1853 West Polk Street, Chicago 12, Illinois.

A.M.A. SEX PAMPHLETS NOW IN BOOK FORM

E. P. Dutton and Company is now publishing in book form the series of sex pamphlets first prepared and distributed by the Joint Committee on Health Problems in Education of the National Education Association and the A.M.A.

The publishing company will concentrate on advertising and merchandising the series for over-the-counter sales to the public. The original pamphlets, however, will continue to be distributed to educational, medical, and public health agencies.

BEGIN NEW CAMPAIGN AGAINST ACCIDENTAL POISONING

Medical and nonmedical people have banded together in a new all-out war against accidental poisoning, which has killed some 15,000 Americans, including 5,000 children in the past decade.

The latest developments in the intensive campaign were outlined in a special article in the Jan. 12 Journal of the American Medical Association.

Much progress has already been made in the fight to reduce accidental poisoning. Ten years ago it was estimated that every day over 850 persons became ill and six persons died from eating or drinking some poisonous agent. Today the rate is 425 nonfatal and three fatal cases of poisoning every day. This reduction has occurred in spite of a growing population and a growing number of new potentially harmful household items and drugs, mainly because of the intensive efforts of many medical and non-medical groups.

Examples of the efforts of various groups listed in the article include the Boy Scouts of Troop 99 in Montclair, N. J., making door-to-door calls on 1,000 families to warn of the dangers in home medicine chests, and the Milwaukee Junior Chamber of Commerce sponsoring a "Poison Day" when they handed out warning leaflets in shops and on street corners.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

ORLEANS PARISH

Mothers and mothers-in-law of the members of the Woman's Auxiliary to the Orleans Parish Medical Society were honored at the monthly program tea held Wednesday, April 10th at 2:30 p.m. at the Orleans Club.

Mrs. Frank S. Oser, Jr. and Mrs. James L. Treadway, chairmen of the Auxiliary Essay Contest, were in charge of the program, which consisted of the reading of the prize winning essays on "The Advantages of Private Medical Care" and "The Advantages of the American Free Enterprise System", written by local high school students. This is the eleventh year that the Auxiliary, in cooperation with the National Association of American Physicians and Surgeons Freedom Programs, has sponsored this contest.

Fifty-three essays were submitted by students

in the 10th, 11th and 12th grades, with eight schools participating: Dominican, Ursuline Convent, Jesuits, Mount Carmel Academy, Warren Easton, Fortier, Rugby Academy, and Martin Behrman. These essays were judged by Mother Teresita, O.S.U., Principal Grade School, Ursuline Academy, Mr. Harry R. Cabral, attorney, and Dr. Abe Golden.

The first place winner of \$50.00 is Miss Marilyn Reilly, Fortier; the second place winner of \$25.00 is Miss Forrestine Boyd, Fortier; the third place winner of \$15.00 is Miss Maria Cicero, Ursuline Academy; and the fourth place winner of \$5.00 is Miss Felice Jones, Dominican.

Mms. Oser and Treadway were assisted by their committee: Mms. Edwin Guidry, Benjamin O. Morrison, Branch Aymond, Nicholas Chetta, Jacques Magne, Fred O. Brumfield, Lawrence

Kavanaugh, Monte Meyer, Byron J. Casey, Nicholas Montalbano, Calvin Cranfield, William J. Rein, Richard Corales, Robert Rougelot, Charles W. Peterson, Bruno Mancuso, John Tanner, Celeste Wischer, Nathan Gisclair, Joseph Hountha, Spencer McNair, F. Leo Faust, and Robert C. Kelleher.

Hostesses for the event were Mms. Philip R. Lorio, John J. Walsh, Andrew J. Wyly, Winston H. Weese, Lawrence L. Washburn, Jr., F. N.

Vallette, Howard J. Tatum, S. E. Taormina, Henry K. Threefoot, Andre C. Touse, Robert Birchall, Charles L. Brown, Jr., Vincent J. Derbes, Vincent DiLeo, Ben Freedman, Julius Finklestein, Servando V. Garcia, Louis J. Gehbauer, Norman S. Hunt, Charles C. Jaubert, Walter McDowell, Blaise Salatich, A. Seldon Mann, and David Freedman.

Mrs. Robert C. Kelleher,
Publicity Chairman

BOOK REVIEWS

Pain, Its Mechanisms and Neurosurgical Control; by James C. White, M. D., William H. Sweet, M. D., with psychiatric assistance of Stanley Cobb, M. D. and Frances J. Bonner, M. D., Springfield, Illinois, Charles C Thomas, 1955. pp. 736, 134 illustrations, 53 Tables, Price \$17.50.

This monumental collection of personal experiences systematizes current thought on the relief of pain by surgical interruption of neural pathways. It is both lucid and definitive. The author's numerous previous excellent papers and monographs have been combined into this single volume. Theoretical and anatomical problems are amply considered, although some current experimental data on trigeminal neuralgia is not included. The authors in general limit themselves to their own experience. Documentation of their cases is as full as necessary for analysis of each problem considered, and bibliography is selected with discrimination.

Since this monograph is unusually comprehensive, many fields of special interest in medicine, both preclinical and clinical, will find useful information. From the clinician's point of view intractable pain and suffering should be evaluated for the possibility of relief by surgery.

The results presented show that it is possible to achieve brilliant success with many carefully selected cases. Nevertheless, the details of pain transmission and interpretation will require much further analysis.

W. RANDOLPH PAGE, M. D.

Cardiac Diagnosis, A Physiologic Approach; by Robert F. Rushmer, M. D. Philadelphia, W. B. Saunders Co. 1955. Illus. 447 p. Price, \$11.50.

This is the most refreshing book in Cardiology to appear in a number of years. The emphasis on the importance of the peripheral circulation is commendable, and although some of the clinical chapters were thought to be, perhaps, a little weak, the chapters on Function of the Normal Cardio-Vascular System and Regulation of the Cardio-Vascular System were thought to be quite good, and contain invaluable knowledge for the internist.

FRED M. HUNTER, M. D.

Cancer Cells; by E. V. Cowdry, Philadelphia, Pa., W. B. Saunders Company, 1955, Pp. 677, Price \$16.00.

This excellent work represents many years of research and study by an eminent scientist. Representative chapters include those devoted to the malignant growth of cancer cells, comparisons of the cytoplasm of normal and malignant cells, viruses as cancer agents, heredity and so on. Moreover prophylaxis is not ignored. There is a most interesting discussion on spontaneous disappearance and change in malignancy of cancer cells.

Almost all physicians have to deal with cancers in some way, directly, or through the effects produced. This book therefore should have a particularly large audience.

VINCENT J. DERBES, M. D.

PUBLICATIONS RECEIVED

The Devin-Adair Company, N. Y.: *The American Fluoridation Experiment*, by F. B. Exner, M. D., and G. L. Waldbott, M. D.

Grune & Stratton, N. Y.: *Clinical Cardiopulmonary Physiology*, sponsored by the American College of Chest Physicians.

Little, Brown & Co., Boston: *Expectant Motherhood*, by Nicholson J Eastman, M. D., (3rd edit., revised).

Oxford University Press, N. Y.: *The Fight for Fluoridation*, by Donald R. McNeil.

Philosophical Library, N. Y.: *Albert Schweitzer, The Story of His Life*, by Jean Pierhal; *Baruch Spinoza, The Road to Inner Freedom*, edited by Dagobert D. Runes; *Experimental Psychology*, and other essays, by I. P. Pavlov.

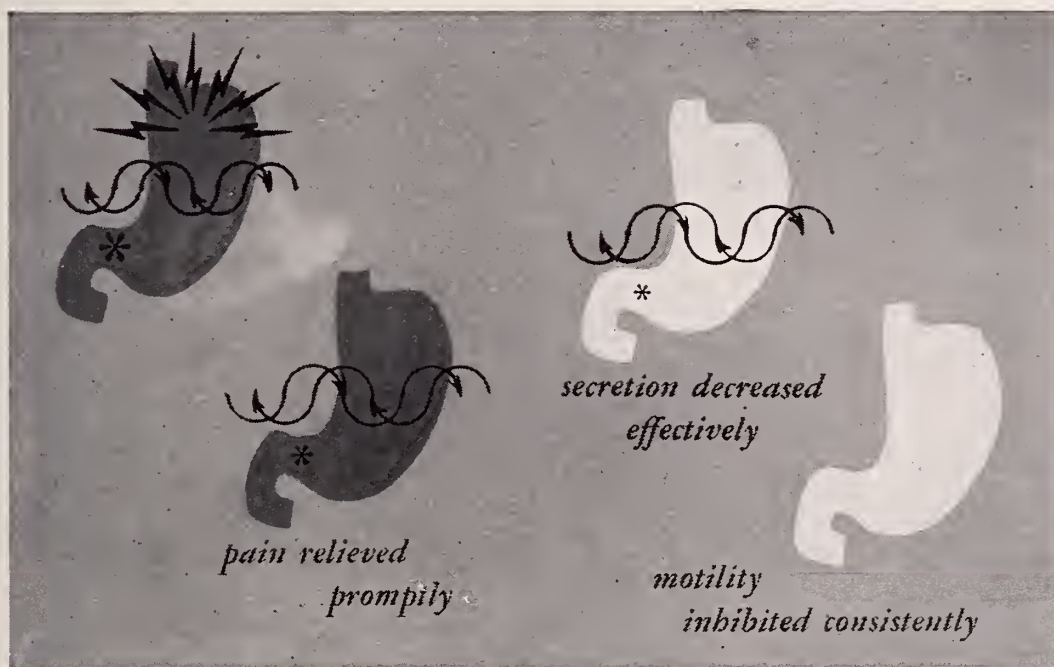
W. B. Saunders Co., Phila.: *Dorland's Illustrated Medical Dictionary* (23rd edit.).

Charles C Thomas, Publisher, Springfield, Ill.: *Diseases and Disorders of the Colon*, by Anthony Bassler, M. D.; *Halsted of Johns Hopkins*; *The Man and His Men*, by Samuel James Crowe, M. D.; *Gynecologic Therapy*, by William Bickers, M. D.; *Brain Mechanisms and Drug Action*; *A Symposium*, compiled and edited by William S. Fields, M. D.

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incidence of side effects was minimal. . . ."

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*Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: Pro-Banthine in the Treatment of Peptic Ulcer. A Clinical Evaluation with Gastric Secretory, Motility and Gastroscopic Studies. Report of 60 cases, Am. J. M. Sc. 232:156 (Aug.) 1956.

SEARLE

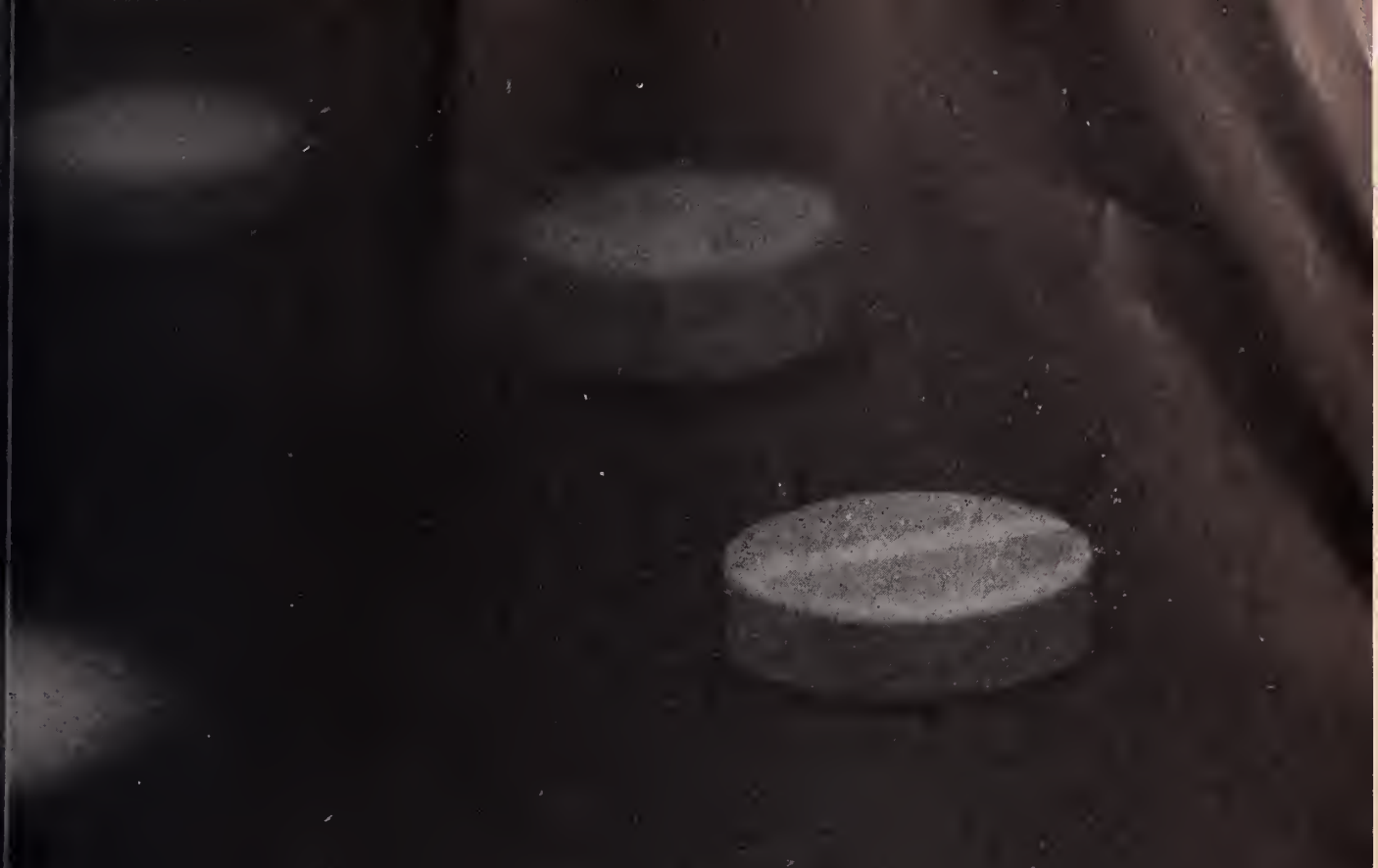
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excellent antibacterial action
at radically reduced dosage**

KYNEX SETS A NEW STANDARD FOR SULFA THERAPY



cuts dosage 75%

LOW DOSAGE: a total maintenance dose of only 2 tablets daily.

SOLUBILITY: prompt absorption, ready diffusion into body fluid and tissue.

PROLONGED ACTION: therapeutic blood levels within the hour, blood concentration peaks within 2 hours—5-10 mg. per cent blood levels persist 24 hours after a single oral dose of 1 Gm.

BROAD-RANGE EFFECTIVENESS: KYNEX is particularly efficient in urinary tract infections due to sulfonamide-sensitive organisms, including *E. coli*, *Aerobacter aerogenes*, paracolon bacilli, streptococci, staphylococci, Gram-negative rods, diphtheroides and Gram-positive cocci.

SAFETY: KYNEX offers a margin of clinical safety based on low required dosage, solubility, slow excretion rate. Although KYNEX Sulfamethoxypyridazine is a sulfonamide derivative and the usual precautions regarding such drugs should be observed, the low daily dose of 1.0 Gm. is all that is required for therapeutic blood levels. No increase in dosage is recommended.

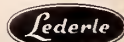
CONVENIENCE: The low adult dose of 1 Gm. (2 tablets) per day offers optimal convenience and acceptance to patients.

TABLETS: Each contains 0.5 Gm. (7½ grains) sulfamethoxypyridazine. Bottles of 24 and 100.

SYRUP: Each teaspoonful (5 cc.) contains 250 mg. sulfamethoxypyridazine. Bottle of 4 fl. oz.

® REG. U. S. PAT. OFF.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK





more than hope...

When the contents of Pandora's Box were released,
Hope alone remained. To the allergic patient,
faced with a veritable Pandora's Box of discomforts,
'Perazil' offers far more than hope. It gives
ability to withstand allergens, without reactions.

'PERAZIL'[®]

brand Chlorcyclizine Hydrochloride

long-lasting action • exceptionally little side effect

For children and adults: SUGAR-COATED TABLETS OF 25 mg.
SCORED (UNCOATED) TABLETS OF 50 mg.



BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

perhaps the safest ataraxic known . . .

PEACE OF MIND

ATARAX[®]
(brand of hydroxyzine) Tablets-Syrup

safety highlighted in every clinical report.

Depending on the condition treated, the effectiveness of ATARAX has ranged from 80 to 94%. But clinicians have agreed unanimously on its safety. After more than 85,000,000 doses — many on long-term administration at high dosage — no evidence of addiction, blood dyscrasias, parkinsonian effect, liver damage, depression or other serious side effects have been reported.

calms tense patients.

ATARAX produces its calming, peace-of-mind effect without disturbing mental alertness. In the tension/anxiety conditions for which it is intended, you will find ATARAX effective in about 9 of every 10 patients.

prescribe ATARAX as follows:

Adults: usually one 25 mg. tablet, or two tsp. Syrup, three times daily.

Children: (over 3 years): usually one 10 mg. tablet, or one tsp. Syrup, twice daily.

Supplied: Tablets, tiny 10 mg. (orange) and 25 mg. (green), bottles of 100. Syrup, 10 mg. per tsp., pint bottles.

Since response varies from patient to patient, dosage should be adjusted accordingly. Prescription only.



Chicago 11, Illinois



new

**the logical
combination for
antibacterial
therapy
and
antifungal
prophylaxis**

what is it?

the phosphate complex of tetracycline

**FOR INITIAL ANTIBIOTIC BLOOD LEVELS
FASTER AND HIGHER THAN EVER BEFORE**

+

antifungal activity of Mycostatin

**FOR ADDED PROTECTION AGAINST
MONILIAL SUPERINFECTION**

MYSTECLIN

Squibb Tetracycline Phosphate Complex (Sumycin) + Nystatin (Mycostatin)



why should you prescribe it?

Because it provides highly effective
broad spectrum antibiotic therapy for many
common infections

AND AT THE SAME TIME

protects your patients against the monilial
overgrowth so commonly observed during therapy
with the usual broad spectrum antibiotics

MYSTECLIN

Squibb Tetracycline Phosphate Complex (Sumycin) + Nystatin (Mycostatin)



Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline hydrochloride and 250,000 units Mycostatin.

Minimum adult dosage: 1 capsule q.i.d. Bottles of 16 and 100.

SQUIBB



Squibb Quality—the Priceless Ingredient

little
How to win friends ...

NOW!
 1 1/4 GR. SIZE

CHILDREN'S SIZE
BAYER
 ASPIRIN

FLAVORED

Children's Size
BAYER
 ASPIRIN

Genuine

48 TABLETS
25¢
 1 1/4 GRS. EA.

DRUG
 (NEW)
 BAYER

The Best Tasting
 Aspirin you can prescribe.

The Flavor Remains Stable
 down to the last tablet.

25¢ Bottle of 48 tablets (1 1/4 grs. each).

We will be pleased to send samples on request.

THE BAYER COMPANY DIVISION

of Sterling Drug Inc.

1450 Broadway, New York 18, N. Y.



"...a calmative effect...superior to anything we
had previously seen with the new drugs."*

true calmative

nostyn[®]

Ectylurea, AMES
(2-ethyl-cis-crotonylurea)

the power of gentleness

allays anxiety and tension

without depression, drowsiness, motor incoordination

NOSTYN is a *calmative*—not a hypnotic-sedative—unrelated to any available chemopsychotherapeutic agent • no evidence of cumulation or habituation • does not increase gastric acidity or motility • unusually wide margin of safety —no significant side effects

dosage: 150-300 mg. (½ to 1 tablet) three or four times daily.

supplied: 300 mg. scored tablets, bottles of 48 and 500.

*Ferguson, J. T., and Linn, F. V. Z.: Antibiotic Med. & Clin. Therapy 3:329, 1956.



AMES COMPANY, INC • ELKHART, INDIANA

AMES COMPANY OF CANADA, LTD., TORONTO

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• TESTED • APPROVED • ACCEPTED

SAFE
for

• BURNS • SCALDS • ABRASIONS

- ★ "Initial rapid pain relief, early tissue regrowth, control of secondary infection."
- ★ "A marked reduction in total healing time."

- ★ Clinical reports, samples, and descriptive brochure may be had upon request. Please write us on your letterhead.

RICH COMPANY, INCORPORATED

3518 Polk Avenue

Houston, Texas

Recent Observations

On Self-Regulated Schedules For Infants

Genetically acquired behavioral predispositions enable the normal baby to regulate its feeding intake and periodic hunger sensations, its feeding habits. These physiological regulatory forces may be satisfied by adapting the formula content and feeding period to the individual needs of the infant. It involves a sensible compromise between too rigid a schedule, geared to the clock and too lax a schedule, based on self-demand feedings. Such is the current objective: for either extreme can lead to infant feeding difficulties.

The newborn may become a feeding problem if the prescribed formula is excessive or the feeding schedule rigid. Every time he is awakened abruptly from satisfying slumber to be fed forcefully, the baby gradually loses his enthusiasm for the food and begins to resist the feeding. The young infant may balk at the crude introduction of a new food or feeding procedure without the proper prelude of gradual adaptation of taste, color, consistency and quantity.

The older infant weaned from bottle to cup may reject milk or go on a hunger strike. Devoted to his bottle he resents its sudden deprivation. It takes a certain readiness for weaning to make that change agreeable. Later the infant becomes somewhat independent of his mother and arbitrary with his food. What he enjoyed yesterday, he rejects today. If he distorts the diet for a day and his mother resorts to force, a feeding problem is in the making. Sensible decorum will solve these

little difficulties before they become big behavior disturbances in childhood.

The problems of infant feeding are always the same but solutions may differ with each era. The carbohydrate requirement for all infants is as completely fulfilled by KARO® Syrup today as a generation ago. Whatever the type of milk adapted to the individual infant, KARO may be added confidently because it is a balanced mixture of low sugars, easily mixed, well tolerated, palatable, hypoallergenic, resistant to fermentation, easily digestible, readily absorbed, non-laxative. Readily available in all food stores.

MEDICAL DIVISION
CORN PRODUCTS REFINING CO.
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Produced by
Corn Products Refining Co.

Behind Every Karo Bottle... A Generation of World Literature

KNOX PROTEIN PREVIEWS

Overcoming Today's No. 1 Nutritional Problem



Knox "Food Exchange" Diet Enlists the Cooperation of Your DIABETIC Patients for Dietotherapy



1. This Knox booklet is based on nutritionally-tested Food Exchanges¹ and demonstrates that variety is possible for diabetic diets.

2. The easy-to-understand Food Exchanges simplify dietary control for the diabetic by eliminating calorie counting.

3. Diets promote accurate adjustment of caloric levels to the special needs of the patient, yet allow each individual considerable latitude in the choice of foods.

4. Each booklet presents in addition 16 pages of appetizing, kitchen-tested recipes.

1. The Food Exchange Lists referred to are based on material in "Meal Planning with Exchange Lists" prepared by Committees of the American Diabetes Association, Inc., and The American Dietetic Association in cooperation with the Chronic Disease Program, Public Health Service, Department of Health, Education and Welfare.

Chas. B. Knox Gelatine Co., Inc.
Professional Service Dept. SJ-25
Johnstown, N. Y.

Please send me dozen copies
of the Knox diabetic brochure describ-
ing the use of Food Exchange Lists.

Your Name and Address



NEW...

RELIEVES ANXIETY AND TENSION

RELIEVES JOINT INFLAMMATION

RELIEVES DISCOMFORT AND DISABILITY

RELIEVES MUSCLE SPASM

ME

Each Multiple Compressed Tablet of MEPROLONE provides the inseparable antiarthritic, antirheumatic benefits of:

1. *Prednisolone buffered*—the newest and most potent of the "predni-steroids" for prompt relief of joint pain and arrest of the destructive inflammatory process.

2. *Meprobamate*—the newest and safest of the muscle-relaxant tranquilizers for profound relaxation of skeletal muscle in spasm.

Tolerance to this combination is good because there is little likelihood of sodium retention, potassium depletion or gastric distress with buffered prednisolone, and meprobamate rarely produces significant side effects in therapeutic dosage.

An additional important therapeutic benefit, often overlooked, stems from the tranquilizing action of meprobamate. This component of MEPROLONE relieves mental tension and anxiety so often manifest in arthritics, making them more amenable to other rehabilitation measures.

INDICATIONS: A wide variety of conditions, in which four symptoms predominate: *a*) inflammation *b*) muscle spasm *c*) anxiety and tension *d*) discomfort and disability; i.e., rheumatoid arthritis, rheumatoid spondylitis (Marie-Strümpell disease), Still's disease, psoriatic arthritis, osteo-

Therapeutic benefits of MEPROLONE compared with traditional antiarthritics

	relieves pain	suppresses inflammation	relaxes muscle	eases anxiety	improves sleep
Salicylates	✓	✓			
Muscle relaxants			✓ ¹		
Tranquilizers				✓ ¹	
Steroids	✓	✓			✓
MEPROLONE	✓	✓	✓	✓	✓

¹ Meprobamate is the only tranquilizer with muscle-relaxant action

arthritis, bursitis, synovitis, tenosynovitis, myositis, fibrositis, fibromyositis, neuritis, acute and chronic low back pain, acute and chronic primary and secondary fibrositis and torticollis, intractable asthma, respiratory allergic and inflammatory eye and skin disorders (as maintenance therapy in disseminated lupus erythematosus, periarteritis nodosa, dermatomyositis and scleroderma).

SUPPLIED: Multiple Compressed Tablets in bottle 100 in two formulas as follows: MEPROLONE-1—1.0 mg of prednisolone, 200 mg. of meprobamate and 200 mg. dried aluminum hydroxide gel. MEPROLONE-2—200 mg. of prednisolone in the same formula.

NO OTHER
ANTIRHEUMATIC
PRODUCT
PROVIDES AS MANY
BENEFITS AS

MEPROLONE[®]

MEPRO | **BAMATE**
PREDNISO | **LONE, buffered**

THE ONLY
ANTIRHEUMATIC,
ANTIARTHRITIC
THAT SIMULTANEOUSLY
RELIEVES:

- 1. MUSCLE SPASM**
- 2. JOINT INFLAMMATION**
- 3. ANXIETY AND TENSION**
- 4. DISCOMFORT
AND DISABILITY**

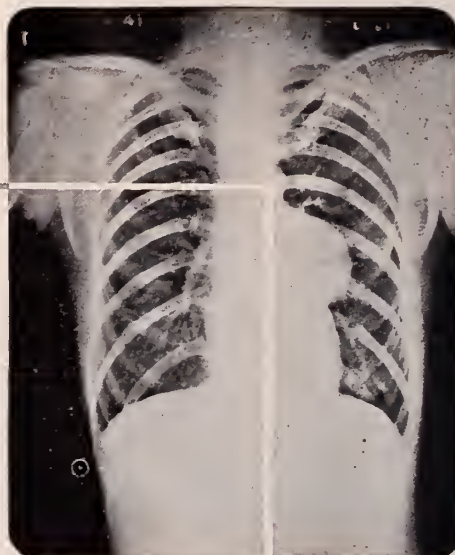


MERCK SHARP & DOHME
DIVISION OF MERCK & CO., INC. PHILADELPHIA 1, PA.

chances are 3 to 1 it'll be a Chest Film*...

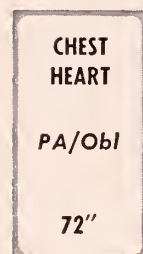
You might suppose a good chest film would be easy to take. Yet this "simple" examination is often very troublesome. The trick is to get consistent *uniformity* so films of a given patient taken at long intervals will always be dependably comparable in density and contrast. If you're an expert technician, you juggle kilovoltage, time, milliamperage and focal spot to suit each patient. If you're not, you guess... *wrong*, too often.

There's no guessing, though, when you work with a Picker "Anatomic" x-ray control. It automatically integrates and sets up the whole complex of correct exposure factors for individual parts of individual patients. *You need no charts, make no calculations.*



*National hospital surveys indicate that 33% of all roentgen examinations are chest films. Next in number are all extremities, averaging 10%.

here's all you do...



1 dial the bodypart
this chest station is one of 22 bodypart stations



2 set its thickness
to the measured thickness of the port



3 take it!
that's all

Companion to the Picker Anatomic control is this efficient "Century" x-ray table... a table with the rich look you'd expect to find only in upper-bracket x-ray equipment. The single tube converts from fluoroscopy to radiography and vice versa in a jiffy. 100 ma and 200 ma models.

Let your local Picker man tell you more about this remarkable x-ray machine... or write Picker X-Ray Corporation, 25 South Broadway, White Plains, New York.



new way in x-ray PICKER "ANATOMIC"

Century II
fluoroscopic/radiographic unit



Picker office for **LOUISIANA** and Mississippi is 1220 St. Charles Avenue, New Orleans 13, La.
Alexandria, La., 3020 Dennis Street

Jackson, Miss., 2364 Payden Street

Rauwiloid[®]

A Better Antihypertensive

**"We prefer to use
alseroxylon (Rauwiloid)**

since it is less likely to produce excessive fatigue and weakness than does reserpine."¹ Up to 80% of patients with mild labile hypertension and many with more severe forms are controlled with Rauwiloid alone.

1. Moyer, J.H.: J. Louisiana M. Soc.
108:231 (July) 1956.

A Better Tranquilizer, too

"...relief from anxiety resulted in generally increased intellectual and psychomotor efficiency with a few exceptions."² Rauwiloid is outstanding for its *nonsoporific* sedative action in a long list of unrelated diseases not necessarily associated with hypertension but burdened by psychic overlay.

2. Wright, W.T., Jr., et al.: J. Kansas M. Soc.
57:410 (July) 1956.

Dosage: Merely two 2 mg. tablets at bedtime.
After full effect one tablet suffices.

Best first step when more potent drugs are needed

Rauwiloid is recognized as basal medication in all grades and types of hypertension. In combination with more potent agents it proves synergistic or potentiating, making smaller dosage effective and freer from side actions.

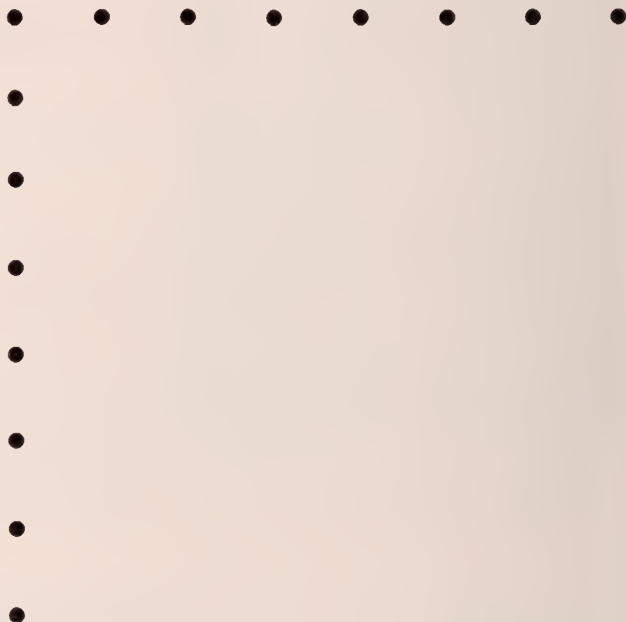
Rauwiloid[®] + Veriloid[®]

In moderate to severe hypertension this single-tablet combination permits long-term therapy with dependably stable response. Each tablet contains 1 mg. Rauwiloid (alseroxylon) and 3 mg. Veriloid (alkavervir). Initial dose, 1 tablet t.i.d., p.c.

Rauwiloid[®] + Hexamethonium

In severe, otherwise intractable hypertension this single-tablet combination provides smoother, less erratic response to hexamethonium. Each tablet contains 1 mg. Rauwiloid and 250 mg. hexamethonium chloride dihydrate. Initial dose, $\frac{1}{2}$ tablet q.i.d.

Riker LOS ANGELES



THE LAW OF AVERAGES

Every man and woman is a "statistic."

Each makes a personal contribution to the Law of Averages. In a matter over which they have little or no control, the contribution of some is plus, the contribution of others, minus. Only rarely is the contribution exactly average.

This fact is important to the professional man or woman buying life insurance or a retirement plan. Each person wishes to be sure his or her money is properly spent in purchasing "coverage" in the event of death. Each—planning his or her own economics—would like the availability of cash at a certain advanced point in life or career.

How to plan? Who knows how long he or she will live—despite the Law of Averages?

Tidelands Life has taken the guesswork out of such important planning. Illustrating Tideland's New Insured Plan for Retirement with a \$10,000.00 policy, this is what it guarantees to do for you if you participate:

IF YOU DIE

Any time after this policy is issued, Tidelands Insurance Company will pay to your beneficiary \$10,000.00 cash—and—will return to your beneficiary all the premiums you have paid to the Company.

IF YOU LIVE

Tidelands Life will pay you, at age 65, \$10,000.00 cash—and—return to you all the premiums you have paid to the Company.

Tidelands Life Insurance Company, a company whose record of over seventeen million dollars in life insurance sales in eight months has placed it among the important financial institutions of the State of Louisiana, is pleased to be able to offer this unique plan to professional men and women.

This Plan is available for a limited time only. Fill-in and mail the coupon to Tidelands Life today.

Mail to:

TIDELANDS LIFE INSURANCE COMPANY
Professional Department
Bunkie, Louisiana

M57

Please send me the details concerning the special Insured Plan for Retirement for professional persons.

NAME (Please print): _____

STREET ADDRESS: _____

CITY: _____

DATE OF BIRTH: (Mo.) _____ (Day) _____ (Year) _____

Meat...

Good Nutrition and the Metabolic Changes of Adolescence

The sharp increase in nutritional requirements during adolescence is ascribed to the rapid growth, restless activity, high basal metabolism, and increased rate of organ development during this period.^{1, 2} Nutrient needs during adolescence are higher than at any other period of life³ except for pregnancy and lactation.

In order to satisfy these extremely high nutritional requirements, "protective" foods supplying liberal amounts of protein, vitamins, and minerals should predominate in adolescent diets.³ Such foods include meat, poultry, fish, milk, eggs, vegetables and fruits, and whole-grain or enriched cereals and enriched bread. Accessory foods commonly eaten by adolescents to satisfy emotional needs may provide energy, but are commonly responsible for obesity and should not take the place of the "protective" foods.

Meat contributes much toward making the daily meals of adolescents appetizing, ample, and satisfying as well as adequate in protein, B vitamins, iron, phosphorus, potassium, and magnesium. Its complete protein functions in all physiologic mechanisms utilizing protein—tissue growth and replacement, fabrication of enzymes, hormones, and antibodies, and maintenance of the body's fluid balance. Its B vitamins and minerals take part in many processes of intermediate metabolism important in body development.

1. Toverud, K. U.; Stearns, G., and Macy, I. G.: Maternal Nutrition and Child Health. An Interpretative Review, Washington, D.C., National Research Council, National Academy of Sciences, Bull. No. 123, 1950, p. 115.
2. Proudfit, F. T., and Robinson, C. H.: Nutrition and Diet Therapy, ed. 11, New York, The Macmillan Company, 1955, p. 271.
3. Martin, E. A.: Roberts' Nutrition Work with Children, Chicago, The University of Chicago Press, 1954, pp. 231-236.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

A m e r i c a n M e a t I n s t i t u t e
Main Office, Chicago...Members Throughout the United States



years of
documented
experience

YOUR PATIENT NEEDS AN ORGANOMERCURIAL

Practicing physicians know that many years of clinical and laboratory experience with any medication are the only real test of its efficacy and safety.

Among available, effective diuretics, the organomercurials have behind them over three decades of successful clinical use. Their clinical background and thousands of reports in the literature testify to the value of the organomercurial diuretics.

TABLET

NEOHYDRIN[®]

BRAND OF CHLORMERODRIN (16.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA
EQUIVALENT TO 10 MG. OF NON-IONIC MERCURY IN EACH TABLET)

 **LAKESIDE**

a standard for initial control of severe failure

MERCUHYDRIN[®] SODIUM
BRAND OF MERALLURIDE INJECTION

For Real Pain ...give real relief:

A.P.C.^{WITH} Demerol[®] tablets

Each tablet contains:

Aspirin	200 mg. (3 grains)
Phenacetin	150 mg. (2½ grains)
Caffeine	30 mg. (½ grain)
Demerol hydrochloride.....	30 mg. (½ grain)

Average Dose:

1 or 2 tablets.

Narcotic blank required.

Potentiated Pain Relief

WINTHROP LABORATORIES

New York 18, N. Y. • Windsor, Ont.

Demerol (brand of meperidine),
trademark reg. U.S. Pat. Off.

...IN URINARY COMPLAINTS

- * Sterilizes urine in 1 to 3 days
- * Relieves burning in minutes
- * Effective in 93-98% of cases

sulfid*

The original Azo-Sulfa Formula* • Antibacterial • Analgesic

LOCALIZED MUCOSAL ANALGESIA

Phenylazo-diamino-pyridine HCl—acts solely on the urogenital mucosa; provides prompt relief from burning, pain and frequency.

LOCALIZED ANTIBACTERIAL ACTIVITY

Sulfacetamide—eliminates mixed infections rapidly because of its unusual solubility in acid urine common to bacterial invasion of the urinary tract. No renal damage, concretions or anuria.

...and when Spasmolysis is essential

sulfid* B-A

Antibacterial • Analgesic • Antispasmodic

—the dual activity of SULFID with the well-known antispasmodic effect of natural belladonna alkaloids.

Introduced—July, 1954

COLUMBUS

PHARMACAL COMPANY COLUMBUS 16, OHIO

designed to **control anxiety**
in Arthritis, Asthma, Allergic Dermatoses
with **lower corticoid dosage**

the original tranquilizer-corticoid

Ataraxoid*



prednisolone and hydroxyzine

provides the emotional tranquilizer, ATARAX® (hydroxyzine) and the preferred corticoid, STERANE® (prednisolone) • control of emotional factors by tranquilization enhances response to the corticoid for greater clinical improvement • often permits substantial reductions in corticoid dosage, accompanied by reduction of hormonal side effects • confirmed by marked success in 95% of 1095 cases of varied corticoid indications¹

ATARAXOID now written as

Ataraxoid 5.0

5 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in green, scored tablets. Bottles of 30 and 100.

and now available as **NEW**

Ataraxoid 2.5

2.5 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in blue, scored tablets. Bottles of 30 and 100.

and **NEW**

Ataraxoid 1.0

1.0 mg. prednisolone, 10 mg. hydroxyzine hydrochloride, in orchid, scored tablets. Bottles of 100.

advantages: (1) greater flexibility of dosage
(2) effective tranquilization permits lower corticoid dosage

¹ Personal communications

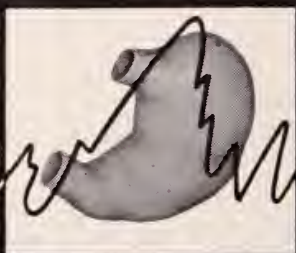
*Trademark

formerly **Ataraxoid**
NOW written **Ataraxoid 5.0**

PFIZER LABORATORIES Division, Chas. Pfizer & Co., Inc. Brooklyn 6, New York



for "the butterfly stomach"



Pavatrine® with Phenobarbital

125 mg.

15 mg.

- *is an effective dual antispasmodic*
- *combining musculotropic and neurotropic action with mild central nervous system sedation.*

dosage: one tablet before each meal and at bedtime.

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TIMBERLAWN SANITARIUM

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Nervous and Mental Diseases

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Complete modern facilities for Insulin Coma, Electroshock and Chemotherapy under constant medical supervision. Psychotherapy. Occupational therapy. All other accepted methods of psychiatric treatment.

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specifically for reduction of overweight



PRELUDIN®

(brand of phenmetrazine hydrochloride)

"...a highly effective and safe appetite suppressant..."

Based on clinical reports, PRELUDIN produces more than twice the weight loss achieved by patients receiving a placebo.² It is singularly free of tendency to produce serious side actions, as well as stimulation.^{1,3} PRELUDIN imparts a feeling of well-being that encourages the patient to cooperate willingly in treatment.^{1,3}

The reduced incidence of side actions with PRELUDIN makes losing weight more comfortable for the average patient, facilitates treatment of the complicated case and frequently permits its use where other anorexants are not tolerated.³

Recommended Dosage: One tablet two to three times daily one hour before meals. Occasionally smaller dosage suffices. On theoretical grounds, PRELUDIN should not be given to patients with severe hypertension, thyrotoxicosis or acute coronary disease.

(1) Halt, J. O. S., Jr.: Dallas Med. J. 42:497, 1956. (2) Gelvin, E. P.; McGavock, T. H., and Kenigsberg, S.: Am. J. Digest. Dis. 1:155, 1956. (3) Natenshon, A. L.: Am. Pract. & Digest Treat. 7:1456, 1956.

PRELUDIN® (brand of phenmetrazine hydrochloride). Scored, square, pink tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.

EVERY WOMAN
WHO SUFFERS
IN THE
MENOPAUSE
DESERVES
"PREMARIN"

*widely used
natural, oral
estrogen*

Digitalis

in its completeness



Each pill is
equivalent to
one USP Digitalis Unit

Physiologically Standardized
therefore always
dependable.

*Clinical samples sent to
physicians upon request.*

Davies, Rose & Co., Ltd.
Boston, 18, Mass.

AYERST LABORATORIES
New York, N. Y. • Montreal, Canada

5645



highly effective—clinically proved

Sigmamycin^{*}

OLEANDOMYCIN TETRACYCLINE

provides added certainty in antibiotic therapy particularly for that 90% of the patient population treated in home or office...

Multi-spectrum synergistically strengthened SIGMAMYCIN provides the antimicrobial spectrum of tetracycline extended and potentiated with oleandomycin to include even those strains of staphylococci and certain other pathogens resistant to other antibiotics.

Supplied: SIGMAMYCIN CAPSULES—250 mg. (oleandomycin 83 mg., tetracycline 167 mg.), bottles of 16 and 100; 100 mg. (oleandomycin

cin 33 mg., tetracycline 67 mg.), bottles of 25 and 100. SIGMAMYCIN FOR ORAL SUSPENSION—1.5 Gm., 125 mg. per 5 cc. teaspoonful (oleandomycin 42 mg., tetracycline 83 mg.), mint flavored, bottles of 2 oz.

^{*}Trademark



PFIZER LABORATORIES, Brooklyn 6, N. Y.
Division, Chas. Pfizer & Co., Inc.

World leader in antibiotic development and production

**PATENTED WEDGE
GIVES SUPPORT
TO CENTER LINE
OF BODY
WEIGHT ★**



★ Insole extension and wedge at inner corner of heel where support is most needed.

- The patented arch support construction is guaranteed not to break down.
- Innersoles guaranteed not to crack or collapse.
- Foot-so-Port lasts designed and the shoe construction engineered with arthopedic advice.
- Conductive Shoes for surgical and operating room personnel. N.B.F.U. specifications.
- We make more shoes for palia, club feet and disabled feet than any other shoe manufacturer.

Write for free booklet on Foot-so-Port Shoes or contact your local **FOOT-SO-PORT** Shoe Agency. Refer to your Classified Telephone Directory.

Foot-so-Port Shoe Company, Oconomowoc, Wis.
A Division of Musebeck Shoe Company

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Doctor, when you peruse the advertising pages of our journal, remember this: All ads are carefully screened—the items, services and messages presented are committee-accepted. Our standards are of the highest. The advertisers like our journal—that's why they selected it for use in their promotional program. They seek your patronage and your response encourages continued use of our publication. In turn, the advertisers' patronage helps us to produce a journal that is second to none in our state. When you send inquiries, tell them that you read their advertisement in The Journal of the Louisiana State Medical Society.

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Research and American Cancer Society Grants*

During 1956 the Society allocated about \$7,800,000 for its national research program (the Divisions currently support research with approximately an additional million dollars). The program for 1956-57, embracing investigations in 139 universities, hospitals and research institutes in 36 states and the District of Columbia, includes research in promising new fields such as virology and immunology. Results for 1956: important, encouraging advances in general knowledge of cancer, improved cancer therapy.

At the same time, the Society improved its research grants program. Emphasis was increased on grants for the support of training and development of scientific investigators, their continuing support after training. Society philosophy: worthwhile ideas are most apt to come from well-trained personnel in well-equipped environments; support for such personnel is needed during formative years; an increase is needed in the number of permanent, full time research positions. One unique type of grant: sufficient money for "additional faculty-level positions" to provide salaries of investigators from close of training to ultimate retirement.

To guide progress, point out promising leads, a new Research Advisory Council was formed in 1956. Also organized: six advisory committees on research on Etiology, Pathogenesis, and Therapy of cancer; Institutional Research Grants, Lung Cancer, and Personnel for the war against cancer.

Said SCIENCE, organ of the American Association for the Advancement of Science: "... the (American Cancer) Society has taken a refreshingly realistic look at the requirements for successful scientific exploration."

* From Vol. XI, No. 2 ACS **Cancer News**



Louisiana State Department of Health

W. J. REIN, M.D.,

State Health Officer

a new dosage form



Compazine[★] Ampuls

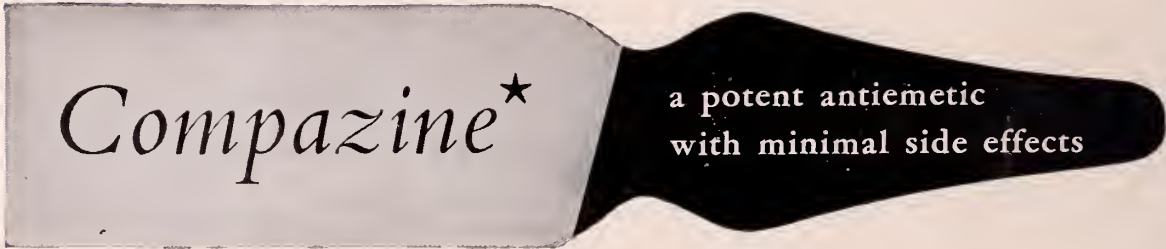
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References: 1. Communication to Abbott Laboratories, 1956. 2. Ferguson, J. T.: Comparison of Reserpine and Harmonyl in Psychiatric Patients: A Preliminary Report, *Journal Lancet*, 76:389, December, 1956. *Trademark

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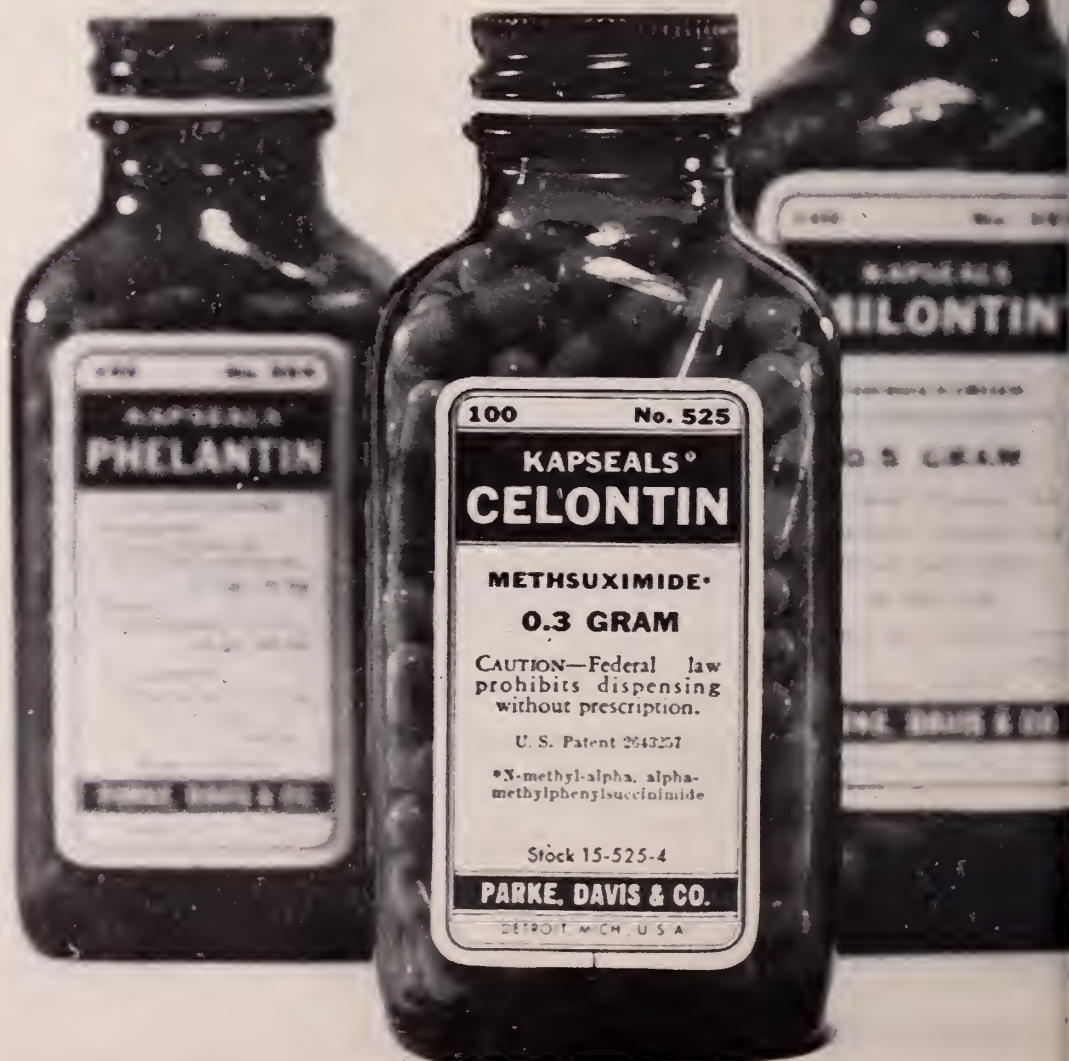
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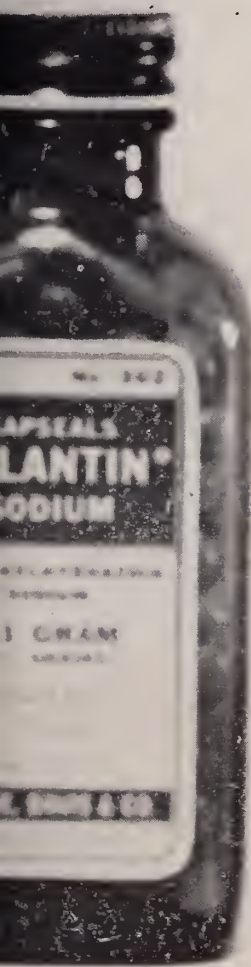
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1. Zimmerman, E. T., and Burgemeister, B.: *Arch. Neurol. & Psychiat.* 72:720, 1954.
2. Zimmerman, E. T., and Burgemeister, B.: *J.A.M.A.* 157:1194, 1955.
3. Zimmerman, E. T.: *Arch. Neurol. & Psychiat.* 76:65, 1956.

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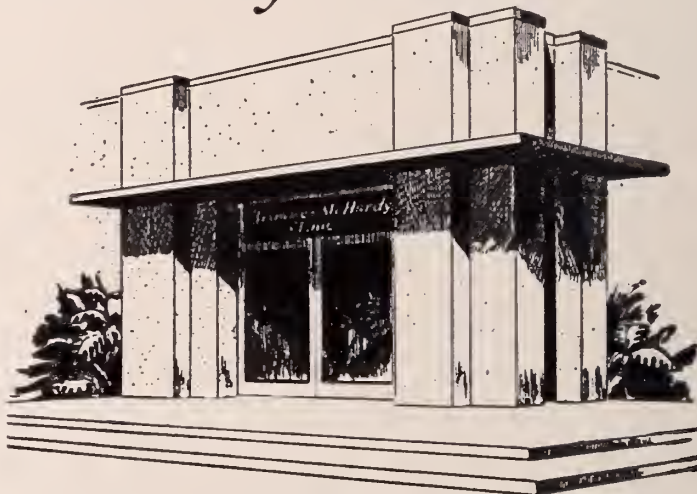
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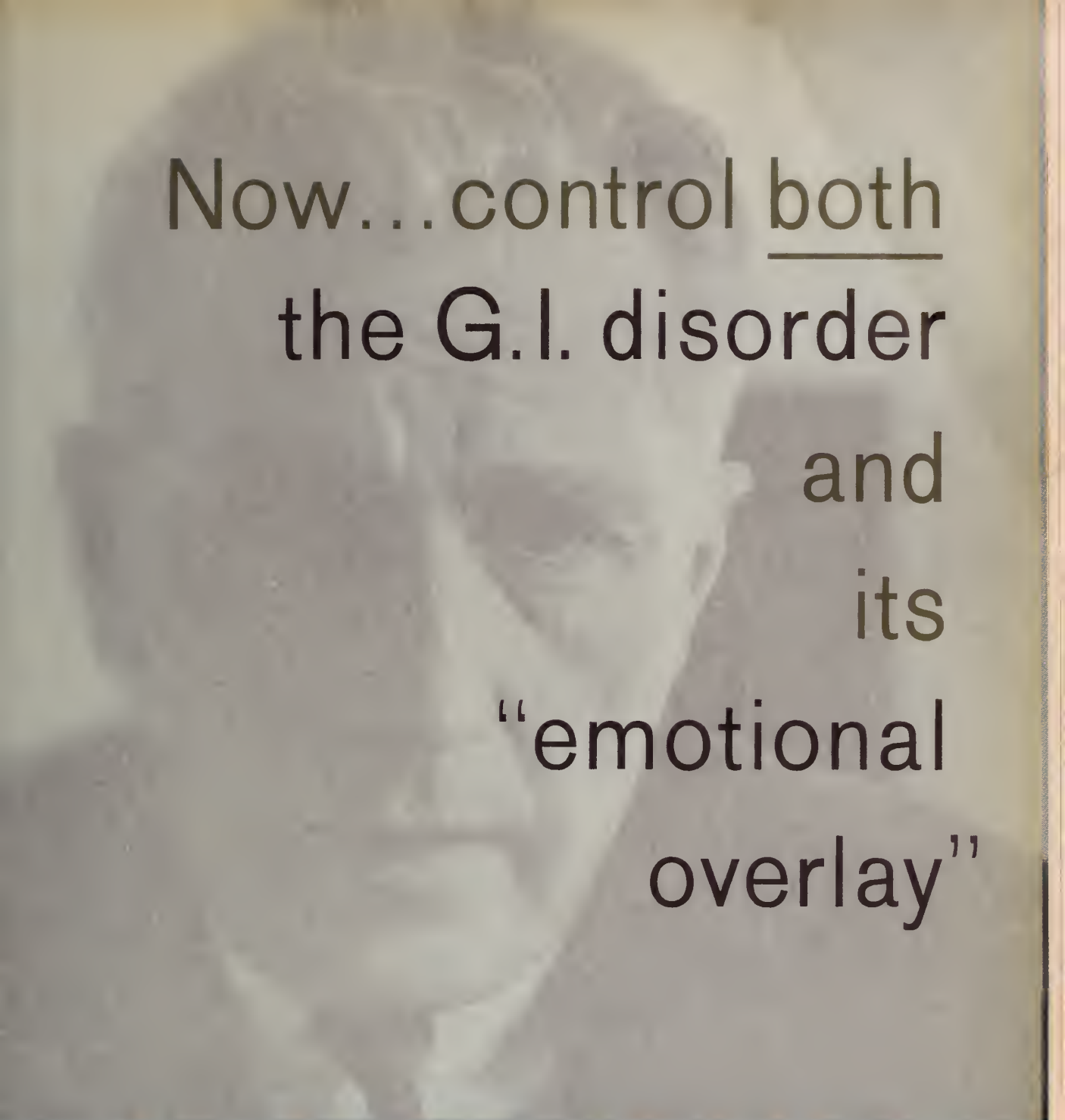
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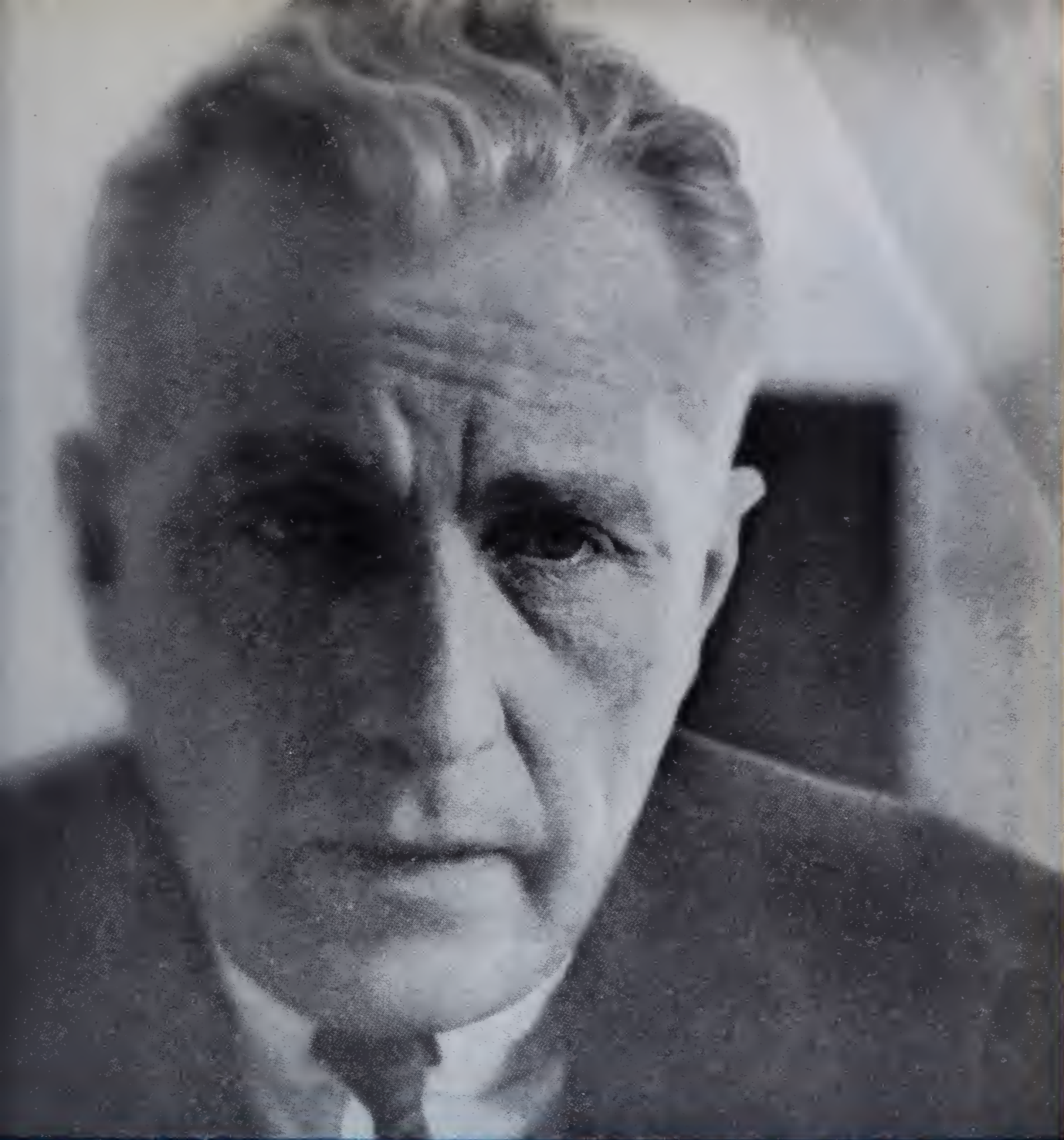
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References: 1. Borrus, J. C.: *M. Clin. North America*, press, 1957. 2. Gillette, H. E.: *Internat. Rec. Med. & G. P.* in. 169:453, 1956. 3. Pennington, V. M.: *J.A.M.A.*, press, 1957. 4. Cayer, D.: Prolonged Anticholinergic therapy of Duodenal Ulcer. *Am. J. Dig. Dis.* 1:301-309 (July) 1956. 5. McGlone, F. B.: Personal Communication to Lederle Laboratories. 6. Texter, E. C., Jr.: Personal communication to Lederle Laboratories. 7. Bauer, H. G. and McGavack, T. H.: Personal Communication Lederle Laboratories.

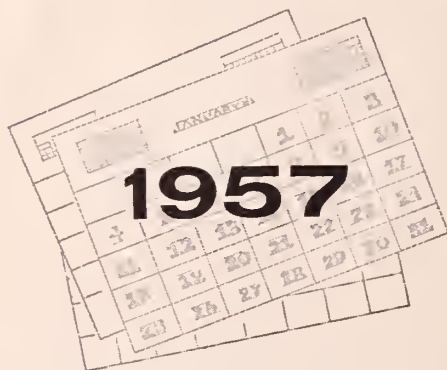
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BREATHS OF STATESMANSHIP *

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Like so many other Americans, I seldom find the time to read and re-read the provocative ideas and the humorous words of our poets.

But lately I have enjoyed reading some light poetry during the hours I spend on air liners as I travel about the country. Earlier this year I ran across a short stanza that seems to fit my topic tonight, "Breaths of Statesmanship." It took some doing to relocate the verse, but I finally found these lines by Walt Mason in a poem called "The Statesmen." One stanza goes like this:

"The statesman throws his shoulders back,
and straightens out his tie,
And says, 'My friends, unless it rains, the
weather will be dry.'
And when this thought into our brains has
percolated through,
We common people nod our heads and loudly
cry,
'How true!'"

Tonight I am not here in the role of a statesman, but I would like to talk briefly on the subject of statesmanship. And I do not intend to say: "My friends, unless we have wisdom, we will have folly."

My aim is to discuss statesmanship at all levels of society, and not the statesmanship of the President, the diplomatic corps,

senators, governors, or other top political figures.

It is my understanding that a statesman is a person who demonstrates particular wisdom in *grasping, treating or directing* matters of *public interest*. This person can be a butcher, baker, candlestick maker, doctor, lawyer, or merchant.

Furthermore, the matters of public interest need not be foreign relations or international problems. They may be about any subject—health, schools, roads, neighborhood relations or freedoms—as long as they are a public concern.

Unfortunately, our modern-day society has the idea that certain citizens have no business in public affairs. The notable examples are *teachers, ministers and doctors*. Although members of the teaching, religious, and medical professions are citizens like everyone else, many Americans believe the teachers place is in the classroom . . . the minister's in the pulpit . . . and the physician's in his office and hospital.

These persons think the professional men should stick strictly to their educational, religious, or medical knitting. In their view, these professional men dirty their hands and their professional status whenever they engage in political affairs or speak their minds on controversial public issues.

Some persons even go so far as to say professional men should keep their dis-

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tance from non-political community activities.

However, if my memory of history serves me correctly, I recall that *five physicians, a minister and a college president* signed the declaration of Independence. These men demonstrated in no uncertain fashion that doctors, teachers, and ministers are *citizens first*.

These five men were not simply expressing a mild, dignified opinion on a public issue. They signed the most controversial written document in the history of mankind. They were full-blooded revolutionaries who chose to live dangerously. They were among the leaders of a major political revolt against duly constituted authority.

If they and their co-leaders had lost their cause, they would have faced much more public criticism for being on the wrong side of an issue . . . much more than ridicule for being active political visionaries . . . much more than the loss of their medical practices, pulpit or educational position. If their cause had failed, they would have faced the gallows or the firing squad. Nevertheless, they took their chance for leadership without hesitation.

If members of these three professions could do so much in that critical period of our history, why should these men and women now be considered above public affairs or outside the realm of politics? Or why should these men and women themselves think public matters are beneath them?

Our nation's need for the interest and participation of all citizens in government is as great today as ever before. Why then should certain professional men be prevented from exercising all the rights and privileges of citizenship? Or why should they ignore their responsibilities and obligations?

No academic degree places an individual above political life. No station in life puts an individual above community tasks.

Our great need at every level of political activity and in every community is common sense and clear thinking by all men

and women. From them will come the vital statesmanship that enriches democracy, freedom and good government.

Hands and hearts are not enough. Minds—yours, mine and everyone's—must be put to work for our society's future. A little mental exercise now and then is not enough. We must apply ourselves constantly to the problems confronting us.

In my travels around the country in the last two years I have seen hundreds of doctors assume greater responsibility in political and community life. I have read many of the articles they have written, too. And believe me, it has been a thrill to see these men and women—young doctors and long-time practitioners—getting into the swim of community activity.

My observations of citizens in action has not been limited to doctors. I have seen and heard men from all walks of life — ministers, teachers, businessmen, farmers, newspapermen and others—contributing to our nation's political life and thought, and lending their mental talents to the solution of various problems.

Within my own profession I have seen the number of medical statesmen increase considerably in recent years. I classify them as statesmen because they are men who are striving for what is best for all Americans and for our free society.

My personal hope is that every doctor will help to continue this good trend, and he will do even more to promote our way of life and to provide imagination, guidance and devotion in all our mutual problems, whether they involve health, good government or basic American philosophy.

I could cite many recent instances of statesmanship by medical men and women. Let me tell you quickly about just one—the story of the doctors in Decatur, a central Illinois city of 75,000.

A few years ago a Decatur survey revealed that 60 per cent of the residents felt physicians were not interested in making their community a better place to live. Now several years later the situation is quite different. Public opinion of Decatur doctors has taken a complete about-face.

Today the doctors are community heroes. Why? Because Decatur doctors became medical statesmen by taking an interest in the treatment and direction of community problems.

Largely because of the county medical society's 11th-hour support of a construction bond issue, six new schools were approved by the voters. Doctors, their wives and PTA teams saved the day by distributing 5,000 leaflets financed by the medical society. The leaflets called school expansion necessary to good health, less delinquency, and better future for local youngsters.

Later, the Decatur doctors rallied public support for a sewer bond issue and for a dam to raise the level of Lake Decatur.

Today the Decatur citizens are saying: "One of the best things that has happened to this community is the revival of the medical society's interest in public affairs."

Here was medical statesmanship in action. Here was a breath of fresh interest, opinion and action helping to direct a growing city to better living.

Words too can mold public opinion. And medical men or others with the ability to write should make the most of it.

While I was traveling from San Francisco to Arizona just a few weeks ago, I ran across an article called "We Forget What Makes America Great." It was written by a physician, Dr. Richard L. Fruin of the U. S. Armed Forces, for Freeman magazine. In his conclusion the doctor says:

"It is only as individuals that we can combat this tendency to the alleged **all wise, all powerful, everywhere present** state where there is **BIG GOVERNMENT** and little people. As individuals we can study our heritage, understand the proper function of government, and do that which lies within our capacity to bring about a rebirth of freedom in America.

"We owe at least this to our children—that they be left no less free than we were."

A breath of statesmanship? Yes, indeed. Dr. Fruin's words demonstrate that we don't always have to quote past American statesmen. Our own words can be forceful and our own ideas provocative.

I think we should remember that there is a good deal of potential statesmanship in all of us. We need only to seek the time and place to use it and then apply it.

This is exactly what one man did in testifying against a Social Security amendment to lower the eligibility age to 50 for totally and permanently disabled persons. His testimony is one of the finest breaths of statesmanship I have known.

Henry Viscardi, president of Abilities, Inc., of New York City, appeared before the U. S. Senate Committee on Finance and gave a magnificent statement. Here is just a brief part of his testimony:

"Our disabled people are crying for the right to be the same. They both want to be, and should be, considered as the ordinary people they really are, each according to his individual capacities and abilities, and each with his compensating qualities to offset the extremes of physical make-up . . .

"If we could only, in the communities of America and in commerce and in industry, shake the ancient superstitions which make us divide our world into **able** and **disabled** persons, and the prevailing belief that the man who has lost his limbs is different from other people. From a medical point of view, sure, he is different; but in society and in industry it is his abilities that count and not his disabilities.

"While I have no recommendations that I would presume to make to this great committee, I come to indicate my apprehension that we may stigmatize the disabled by this legislation, we may condone the ignorance, the misunderstanding which exists; and we might then deprive millions of our citizens of the right to know a productive life, and have them resigned to subsidy, which is not their heritage as Americans."

This breath of statesmanship came from a physically disabled person, a man born without legs. More important, however, it came from an able American mind; from a citizen who is vitally concerned with the well being of all disabled persons and his country.

All of us in medicine, law, religion, education, business, or any other field must remember that we too are citizens first. As individuals we must give of our time and talents to this promotion of our democratic system and to the betterment of the public good.

We also must remember that our pro-

fessions or our trades are not isolated from other fields of endeavor. We in medicine recognize that our profession is interrelated with the business structure, allied professions, social and economic trends, public opinion, government and politics.

Because of this interrelation we must have medical statesmen who can understand and cope with medical issues affecting those outside our profession as well as affecting those within our profession. As the quantity and scope of issues increase, we need more medical statesmen from within our own ranks. Equally important, we need statesmen from other professions and trades to help up with the new challenges and new socio-economic situations confronting us.

I am happy to say that we are beginning to get good counsel and strong aid from statesmen in other professions and trades. I believe that only strong leadership and sound thinking by medical men and our allies can stem certain tides or advance certain ideals.

The need for statesmen within your professions and trades undoubtedly is as great as it is in medicine. Like medicine, you have the manpower and the brainpower to solve your own internal problems. Like medicine, you too can use statesmen from the outside to assist you in certain endeavors and on many issues.

So just as you can help us in medicine, we too can aid you.

Certainly all of us have been guilty of trying to carry the ball alone at times, ignoring the fact that there were other capable men and women from all walks of life who were ready to help us and who could have done much to resolve problems or to put across our programs.

For example, medical societies all around the nation are the first to admit that this year's campaign to inoculate millions of Americans up to the age of 40 with the Salk antipolio vaccine would never have been more than an idea without the cooperation of scores of lay and allied medical organizations.

Men and women from industrial groups, labor unions, schools, PTAs, service clubs, and various organizations worked with medicine. Newspapers and broadcasting stations kept interest alive by repeatedly emphasizing the need for vaccinations, announcing sites for inoculations, and reporting progress of the programs.

From this experience with polio inoculation programs thousand of physicians have learned again that the greatest rewards of civic accomplishment come in working with other groups. This is a most important concept, and all groups should remember to seek cooperation from others.

Just as we work together on programs of action, we also must cooperate on philosophical problems, such as the promotion of our American way of life, maintenance of our liberties, improvement of our free enterprise system, and the betterment of our democratic form of government.

For example, where freedom cries out to be defended, let us not only oppose the curtailment of our own professional and personal freedoms, but let us also come to the aid of others whose freedoms are being invaded. Encroachment on freedom must be resisted in all areas of human endeavor, and none of us must dare think that a little loss of freedom by the other fellow will not imperil us. Whenever and wherever freedom suffers defeat, each of us—no matter what our line of work—is affected.

As you know, some Americans have said that a little government control over the medical profession would be a good thing.

To those persons I simply say that a little control is too much control. A little leads to more control. More control of one profession leads to control over another segment of American life, and so on until all American life is dominated by the government.

I think we all should remember Dr. Fruin's breath of freedom: "We owe at least this to our children—that they be left no less free than we were." In addition, I believe we should remember this

companion breath of freedom, too.

We owe at least this to all our professions—that they be left no less free than they were when we found them.

CONSTIPATION IN THE ELDERLY PATIENT *

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Constipation is usually considered to be the infrequent or difficult passage of feces. The frequency of passage is not so important as the difficulty experienced in passing the stool. Most people have a formed but not hard bowel movement every day or two without the help of cathartics. Some persons have a bowel movement every three or four days with no ill effect. The stool is soft, not large in calibre, and causes no distress locally or systemically. There seems to be no good reason to consider these persons to be constipated. Conversely, others have a daily bowel movement which is large or hard, and causes soreness or bleeding. These persons are constipated in spite of a daily bowel movement. It might be well to state that symptoms previously attributed to autointoxication are not caused by absorption of toxic materials from the colon of a constipated person. They are probably due to an overdistended bowel which causes nervous tension and gives about the same symptoms as nervous tension from other causes, such as eye strain.

GASTROCOLIC AND DEFECATION REFLEXES

The cause of constipation is almost always in the large intestine. The contents of the small intestine are liquid, and are moved along the gut with very little difficulty. In the large intestine, absorption continues, but there is no replacement of the liquid and dissolved food products with intestinal secretions as in the small

intestine. The colon secretes only mucus so that the material in the large bowel becomes more hard and dry up to the time it is expelled. The gastrocolic reflex is activated by food entering the stomach. Entrance of this food causes mass peristalsis in the transverse and descending portions of the colon. Material from the right side of the colon is moved toward the sigmoid. It usually takes three of these peristaltic actions to fill the sigmoid and cause some of the feces to enter the rectum. Normally the rectum is empty, and the desire to defecate is created by fecal material entering it from the sigmoid. If the individual responds by having a bowel movement, the rectum and sigmoid are emptied, and no more material enters the rectum until three more meals are eaten. If this urge to defecate is repressed, reverse peristalsis will return the fecal material to the sigmoid. Present day living requires that the bowels move only at certain times and places, so that it is often inconvenient to stop what we are doing to go to the toilet and empty the bowel. Children at school and at play will not take time to go to the toilet, so early in life the urge to defecate is suppressed time after time. Finally, the bowel no longer contracts and returns the feces to the sigmoid, but allows it to remain in the rectum. The reflex tires so that the individual carries material in the rectum without knowing that it is there and without having the feeling that an evacuation is necessary. Such a person will probably take a laxative after a day or two in order to force more material into the rectum and stimulate the reflex. This is the beginning of the laxative habit which often continues for life.

Whether more older persons are constipated or not is controversial. Most people, including physicians, believe this to be true, but few of the published statistics substantiate this belief. There is a paucity of scientific observations and figures on this subject, but those available seem to indicate that the proportion of elderly persons who are constipated is about the

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same as it is in middle life. There is good reason to believe that this is true, but that the degree of constipation is greater. A person who has taken cathartics most of his life has surely built up some resistance to these drugs and is therefore more constipated.

COMMON CAUSES OF CONSTIPATION

The following factors may be related to constipation in older people:

1. Loss of defecation reflex
2. Cathartic habit
3. More bowel consciousness
4. Sedentary life
 - a. Decreased physical activity
Loss of tone
 - b. Decreased appetite
Low water intake
Low food intake
Decreased vitamins and minerals
Decreased bulk
5. More physical disorders
 - a. Dental condition poorer
 - b. More anorectal disorders and rectoceles
 - c. More bowel disorders such as diverticula and tumors
6. More medication taken
 - a. Some drugs used for heart disease and hypertension slow peristalsis

PROCEDURES IN EXAMINATION

A detailed history is important. The general history will give information regarding the amount of activity, eating, water drinking, cathartics used, other medications and the conditions for which they are taken. Bowel habits should be investigated. It is important to know whether the bowels are moving regularly, and if there has been any recent change in their character of frequency. If cathartics are used, the type, amount, and interval should be recorded. The patient should be questioned as to the character of the stool. Is it hard, soft, or liquid, and is there any associated discharge such as blood, pus, or mucus? Inquiry should be made as to whether there is any prolapse, stenosis, swelling, or itching. Pain is an important symptom, and should be investigated as to location, character, duration, and whether

it is associated with eating or defecation.

Every general physical examination should include a proctoscopy. This is not a difficult examination to do in the office, and it requires very little special equipment. The information received from such an examination is rewarding out of all proportion to the time and effort expended. Anorectal conditions such as hemorrhoids, fissures, papillae, and pruritus are discovered, as well as rectoceles and stenosis. The tone of the bowel wall can be determined, and if the patient is examined without a preliminary enema, it can be noted whether fecal material is present in the rectum without a desire to defecate. If such a condition is found, it indicates that the defecation reflex has been lost or reduced. Finding a sigmoid colon that seems fixed and does not move easily suggests diverticulitis. Seventy-five percent of bowel polyps, which occur with increasing frequency after the third decade, may be seen with a sigmoidoscope. Polyps may be the cause of a change in bowel habit, but, more important, they are precancerous and should be removed.

If sufficient evidence concerning the cause of constipation or a change in bowel habit is not found in the history on examination or on proctosigmoidoscopy, a barium enema is indicated.

TREATMENT

The treatment of constipation in elderly people is not simple. Certain basic principles, however, are obvious. The general condition of the patient should be improved if necessary. This will increase bowel activity, and may even help restore tone to a flabby bowel wall. A diet containing sufficient protein, vitamins, and minerals should be insisted upon. Bulk is often lacking in the diet of older people, so the importance of leafy vegetables, stewed fruits, and bran should be emphasized. Along with the increase in bulk, there must be an increase in fluid intake. Bran especially may cause an impaction if there is insufficient fluid intake. Poorly fitting dentures and loss of teeth make chewing food more difficult, and often

lead to poor appetites and unbalanced diets.

It is questionable whether the physical activities of older people should be appreciably increased, but some do get help for their constipation by gently massaging the abdomen.

Anorectal disorders should be corrected when the general physical condition permits. Painful anal lesions such as ulcers, fissures, pruritus, and cryptitis cause patients to hold back bowel movements because of the associated discomfort, and definitely add to constipation. Hemorrhoids and papillae prolapse into the anal canal and leave less room for the passage of feces. Anal stenosis also inhibits the passage of feces. A rectocele allows the fecal matter to lodge in the recto-vaginal wall rather than to pass through the anal canal, and so adds to constipation. Women with rectoceles usually find that pressure against the posterior vaginal wall while the bowels are moving helps to empty the rectum.

In younger persons, the defecation reflex will often return if the rectum is kept empty—except just before bowel movements—for several months. Older people are less apt to respond to treatment for this condition, but it is often worth trying. The patient is asked to establish a habit time by going to the toilet just after breakfast each morning. It is better if the bowels move spontaneously, but even if they do, the evacuation is not complete, and it is necessary to take an enema after the movement. Only plain water is used in the enema, and only the smallest amount that will give a sensation of fullness or a desire to defecate is used. Soap and glycerin are irritants, and should not be used. Running large quantities of water into the bowels stretches the wall which may already be overdistended because of the constipation. Whether the bowels move or not, the enema is taken in the same manner. The principle underlying this treatment is to keep fecal material out of the rectum and allow it to contract to its normal size. By removing the con-

stant stimulus of fecal material in the rectum, the reflex is also given an opportunity to return. It is necessary to continue this treatment for several months to get results, but enemas taken as described often give satisfaction to those older people who are more bowel conscious. The procedure gives them something harmless to do; it relieves constipation, and, at times, restores the reflex.

Drugs taken by older people for heart disease, hypertension, stomach disorders, and anemias often cause peristalsis to be decreased, and must be taken into consideration in the treatment. A saline or an irritant cathartic is needed with most of these drugs to prevent constipation or impaction.

TYPES OF CATHARTICS AND THEIR ACTION

It may be well to consider some of the more common types of cathartics, and review their actions so that they may be used to the best possible advantage. Most cathartics may be placed in one of five classes:

1. Irritants
2. Salines
3. Bulks
4. Lubricants
5. Wetting agents

A sugar coated pill is the most pleasant and convenient form in which to take a cathartic, so most laxatives are taken in this form. Most, but not all pills contain irritant cathartics. The most common irritant cathartics are cascara, aloin, senna, and phenolphthalien. All of these drugs are absorbed, and, with the exception of phenolphthalien, act by stimulation of Auerbach's plexus. The difficulty is that it is hard to determine where stimulation stops and irritation begins. Lately, senna has been standardized, and there is much better control of its action and dosage. This is not true of the other drugs in this group. The body builds up a tolerance to these drugs which results in the necessity of increasing the dosage to a point where it is almost impossible to get the bowels to move. This is the stage of constipation in which many older patients are found,

and it is a most difficult condition to treat.

Saline cathartics act in a different manner, and may be considered bulks. Although there is some difference in the actions of the ions of the various saline cathartics, it may be said that the general action is that of drawing fluid into the intestinal tract by osmosis. The body tries to dilute concentrated salines that are placed in the intestinal tract, by increasing intestinal secretion. The increased amount of fluid softens fecal matter and increases the volume of the intestinal contents, thereby stimulating peristalsis. It must be remembered that taking saline cathartics can dehydrate a patient if the fluid loss from the cathartic is not replaced by increased fluid intake.

The bulk cathartics are karaya gum, psyllium, bassora gum, tragacanth, agar, bran, and the newer derivatives of cellulose. The action of all these drugs is local. They stimulate peristalsis by increasing the bulk in the intestinal lumen. Psyllium may be partially absorbed, but there is no indication that it is harmful. Many older patients need increased bulk in their intestines because they do not get enough in their diets. These drugs will supply the bulk, but it must again be remembered that more water has to be taken with them or impactions result.

Some persons will just not drink sufficient water; even when the necessity is explained to them. In order to keep the stools soft in these patients, it is necessary to use mineral oil, petrolatum, or one of their emulsions. These products furnish lubrication and increase the bulk somewhat by forming emulsions with the fecal material and softening it so that it can move easily in the bowel lumen and pass through the anal canal without causing trauma. Mineral oil and petrolatum are slightly absorbed by some people. It is also known that they remove some of the fat soluble vitamins from the intestine, but little harm is done if these products are taken only before retiring, after most of the food eaten that day has been ab-

sorbed. The dosage can usually be regulated so there is no leakage, but these drugs should not be used in patients with diverticula, which are common in older people. Mineral oil, when caught in a diverticulum or anal crypt, acts as a foreign body, and can lead to irritation and abscess formation.

Wetting agents act much like mineral oil in that they soften the feces and increase bulk by retaining water. As far as is known at present, they are not absorbed, do not irritate, and they have no effect on the intestinal contents other than to hold more liquid in the fecal mass. They do not cause irritation in diverticula and crypts, but work much better if the fluid intake is increased while they are being used. Dioctyl sodium sulfasuccinate is the most popular wetting agent used at present, but others are beginning to come out of the experimental stage.

Enemas and suppositories should be considered along with cathartics. Plain water or normal saline enemas do nothing but distend the rectum and initiate the defecation reflex. Unless more stimulation or irritation is needed, soap and glycerin should not be used in enemas. This is especially true if the enemas are to be repeated very often. Never use hydrogen peroxide in an enema. It is extremely irritating, and a 1/10th of 1 per cent solution of a wetting agent is much more effective in softening an impaction. Glycerin suppositories are also very irritating, and should be avoided.

A problem that is usually not understood by the patient is that many cathartics empty the entire colon, and that forty-eight hours or more are required for it to refill. The irritant and saline cathartics usually empty the colon from the cecum on. Normally, the next twenty-four hours are needed to get the first fecal material to the sigmoid again, and another twenty-four hours to fill the sigmoid to a point where it is ready to empty itself. Many people feel that another laxative is necessary if the bowels do not move for one day, and so take another dose before the

bowel is really ready for another movement. A cathartic taken every day or even every other day does not give the bowel a chance to act normally, and adds to the cathartic habit.

With the foregoing information in mind, it is usually not too difficult to give relief to most of the patients who are willing to cooperate. The most discouraging problem is that of the patient who has taken gradually increasing doses of all the irritant cathartics and a few of the others, with enemas thrown in for good measure. An explanation to the patient of the existing condition and what is trying to be accomplished is usually helpful, as relief will seldom come rapidly, and treatment will probably be prolonged. Most of these patients have also been taking something every day, and will insist on continuing to do so. A combination of several procedures and medications is usually necessary to give relief. All of these patients should try to establish a habit time by going to the toilet right after breakfast each morning. If the bowels do not move within a few minutes, a small plain water enema is taken. It is important that not more than one pint of lukewarm water be inserted at one time. This should be expelled and the enema repeated rather than using larger amounts which overstretch the bowel. Irritant cathartics cannot be withdrawn suddenly from this type of patient. It is usually better to change the drug and try to decrease it gradually by using another type of cathartic to supplement the irritant. Combinations of irritants with bulks or wetting agents have been used with success, as have the old-time combinations of irritants with mineral oil.

It would be foolish to expect to cure all the people of constipation who have taken cathartics for many years. The physician will have fulfilled his obligation if he is able to help work out a routine that will keep the patient contented without causing too much inconvenience, and without doing harm.

SUMMARY

Constipation is defined.

A brief review of the gastro-colic and defecation reflexes is presented.

The more common causes of constipation in elderly patients are enumerated and discussed.

A classification of cathartics and the pharmacology of each group is given.

Since there is no one easy convenient treatment for constipation in elderly patients, it is necessary for the physician to consider general and local condition of the patient, as well as the pharmacology of the various cathartics in establishing a satisfactory routine for these patients.

REFERENCES

1. Bernstein, William C.: Proctologic problems in the aged, *Geriatrics* 1:240 (May-June) 1946.
2. Cass, Leo J. and Frederik, Willem S.: Doxinate in the treatment of constipation, *Am. J. Gastroenterol.* 26: 691 (December) 1956.
3. Ferrer, Francis P. and Boyd, Lynn J.: Effect of yogurt with prune whip on constipation, *Am. J. Digest. Dis.* 22:272 (September) 1955.
4. Ginsberg, Raphael and Brinegar, Willard C.: Studies of appetite and constipation in advanced life: Psychological and statistical evaluation of a county home survey in Iowa, *Am. J. Digest. Dis.* 21:267 (September) 1954.
5. Heilbrun, Norman, and Bernstein, Charles: Roentgen abnormalities of the large and small intestine associated with prolonged cathartic ingestion, *Radiology* 65:549 (October) 1956.
6. Marks, Mark M.: Functional constipation in the aged. Personal communication.
7. Shaftel, H. E.: Modulated laxative action for geriatric patient, *J. Am. Geriatrics Soc.* 1:549 (August) 1953.
8. Smith, R. S., Ault, G. W., and Castro, A. F.: *Geriatric Medicine*, Chapter 34, 3d Ed., J. B. Lippincott, Philadelphia, 1954.
9. Steiglitz, E. J., and Zeman, Fred. D.: *Geriatric Medicine*, 3d Ed. J. B. Lippincott, Philadelphia, 1954.
10. Wechsler, Lawrence, Kessler, L. A., Goldsmith, M. F.: X-ray study of bowel function in aged, *Geriatrics* 6:293 (Sept.-Oct.) 1951.
11. Zimmerman, Karl: Constipation in the aged, *Pennsylvania M. J.* 59:1158 (September) 1956.

RABIES IN LOUISIANA

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NEW ORLEANS

Rabies in animals has been a threat to the health and happiness of the people of Louisiana for many years. The threat of this dread disease can and should be removed.

EXTENT OF THE PROBLEM

Among the states Louisiana ranks high in the number of cases reported annually.

In 1956, only 2 states reported more cases than Louisiana.

The number of laboratory confirmed animal cases by species, in Louisiana, in the years 1946 to 1956, inclusive, is shown in Table 1. The tremendous increase which occurred in 1956 was caused by an out-

confirmed cases of rabies in foxes were reported from 19 parishes extending from the northwest corner of the state southward to Beauregard Parish and eastward as far as West Carroll Parish.

RABIES IN DOGS

Rabies in dogs, because of the close

TABLE 1
LABORATORY CONFIRMED CASES OF RABIES BY SPECIES IN LOUISIANA 1946-1956.

Animal	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
Dog	88	50	114	137	261	239	187	198	252	313	417
Cat	7	6	4	5	7	12	3	14	16	24	24
Cattle	21	7	6	6	4	2	3	6	0	10	30
Horse	4	0	0	0	0	0	0	0	0	1	0
Swine	1	0	0	0	0	0	0	1	0	0	0
Goat	1	0	0	0	0	0	0	1	0	0	1
Fox	290	75	26	2	4	1	0	0	3	8	19
Mouse	0	0	0	0	0	0	0	1	0	0	0
Raccoon	0	0	0	0	0	0	0	0	1	0	0
Squirrel	0	0	0	0	0	0	0	0	0	0	1
Rat	1	0	0	0	0	0	0	0	0	0	0
Bat		1*									
TOTALS	413	138*	150	150	276	254	193	221	272	356	492

* Rabies virus isolated from 1/19 pools of brain tissue from 94 Florida free-tail bats.⁴ Not included in 1955 total.

break of rabies in foxes which began in 1955 and extended through 1956. Although an epizootic occurred in foxes, the statistical increase is probably due in part to an organized effort to collect and study fox brains for rabies. This increase would not otherwise have been reflected statistically as many of these foxes would have died of rabies without coming to the attention of the Department of Health.

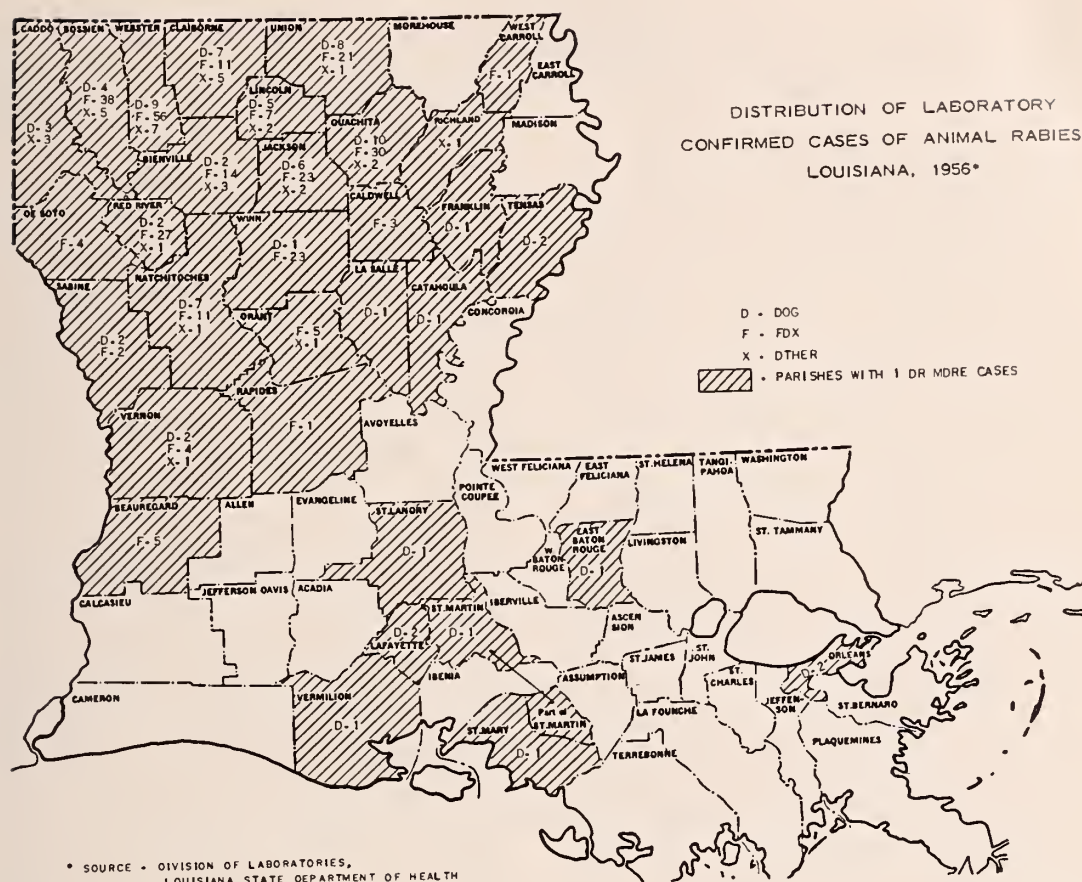
At the same time that the state was having an outbreak of fox rabies, there was a definite reduction in the number of cases of rabies in dogs. This occurred even though the state had a vastly improved reporting system and an effort was made to examine the brain of every suspect rabid dog.

Dogs and foxes were the main reservoirs of rabies in the period 1946 through 1956. However, 10 other species of animals were proven to have rabies during this same eleven year period. (Table 1) Geographically, dog rabies has been observed in all sections of the state. Fox rabies, however, has been largely confined to the northwestern part of the state. (Figure 1) In 1956, 290 laboratory

proximity of dogs to man, poses the greatest rabies threat to man.

The incubation period in dogs ranges from ten days to several months, but is usually about twenty-one to sixty days.¹ The variation in the length of the incubation period is probably related directly to the amount of virus introduced into the susceptible host.

Rabies in dogs is usually classified as furious or dumb type depending upon the symptoms that are shown by the animal. In the early stages of the furious type the dog usually appears normal except that it may be more friendly than usual. If the animal is normally affectionate and well behaved it tends to become shy and hide away. As the disease progresses the dog tends to become irritable, restless, and easily excitable and in a period of one to three days hostility and aggressiveness develop. It is during this stage that the dog begins its wandering. Sometimes it will wander as far as twenty miles. The animal also begins to snap at everything in its path and it will attack any person or animal it encounters. It also exhibits bizarre behavior, eating such things as



sticks, straw, and its own feces. The eyes have a dry, glazed appearance and are held wide open. A peculiar howl-like bark develops. Toward the end of the wandering period a wobbly or staggering gait develops. This is a manifestation of the final or paralytic stage. The paralysis becomes progressively worse until the dog can no longer stand and death ensues. The clinical course of furious rabies is usually from four to seven days, but the dog may live as long as eleven days after onset.

In the dumb form of the disease the dog usually goes off to itself. It tends to hide, wants to be alone, and appears sleepy and melancholy. Paralysis of the jaw, throat, voice, and leg muscles soon occurs and becomes progressively worse until death ensues.

Animals with dumb rabies are not irritable and they seldom snap or bite. Most human exposures occur because someone thinks the dog has a bone or other object lodged in its throat and attempts to re-

move it, or someone attempts to give the animal oral medication.

Dogs with dumb rabies seldom live longer than three days after developing clinical disease.

RABIES IN CATS

Cats that have rabies are very dangerous. They generally hide in dark places and may suddenly attack animals or persons, especially children by jumping up to the face and inflicting severe wounds with their teeth and claws.

The rabid cat usually loses most of its voice, has difficulty in swallowing, develops paralysis and dies within about five days.

RABIES IN OTHER ANIMALS

The symptoms of rabies in all animals are essentially the same as those described for dogs. Ruminant animals are less apt to bite other animals or persons because of their behavior, however, at times they will attack by butting. Horses may become extremely vicious and when unre-

strained may cause severe or even fatal injury to persons. The incubation period for larger animals is generally longer than for dogs.

Rabid foxes have been responsible for heavy losses of livestock, particularly cattle, in northwest Louisiana. (Table 1 will not reflect these losses since the diagnosis in livestock is usually a clinical one, while Table 1 shows only laboratory confirmed cases.) They have also accounted for a great number of human exposures in that area. Animals suffering from rabies are without fear and wild animals such as foxes will fearlessly invade farm premises and attack persons, dogs, and domestic animals. Experiences in north Louisiana have shown that foxes that are killed while attacking in this manner almost invariably show evidence of rabies when examined in the laboratory.

BAT RABIES

The first bat found to be affected with rabies in the United States was killed in June 1953, while attacking a boy in Tampa, Florida.² In September 1953, a woman in Carlisle, Pennsylvania, was attacked by a bat which was found to be rabid.³ Since the first reported case in 1953, evidence of rabies in bats has been found in Louisiana, Georgia, Alabama, Utah, Oklahoma, Minnesota, Florida, Texas, Pennsylvania, California, Montana, Ohio, New Mexico, New York, and Michigan. Burns et al.⁴ reported one isolation of rabies virus from brain tissue of Florida free-tail bats (*Tadarida cynocephala*) collected in New Orleans, Louisiana, in July 1955. Thirteen different species of bats have been implicated thus far in the United States, all of which are of the insectivorous variety. Four of the thirteen species are tree living or solitary bats and nine species are colonial or cave dwelling bats.

The vampire bat (*Desmodus rotundus*) in Latin America is capable of transmitting rabies for long periods of time without showing signs of illness.⁵ Preliminary findings have suggested that this may also be true of our indigenous insectivorous bats. Serum surveys on clinically well

Mexican free-tail bats (*Tadarida mexicana*) in certain areas have shown that a high percentage of them show specific rabies antibodies, indicating the possibility of infection and recovery.⁴

LABORATORY DIAGNOSIS OF RABIES

The symptoms of rabies are not always characteristic and the disease may or may not be recognized clinically. The occurrence of the disease can be confirmed only by laboratory examinations. These examinations are performed by well trained technicians in the State Department of Health laboratories located in New Orleans, Lake Charles, Alexandria, Monroe, and Shreveport.

The heads of all animals suspected of having rabies should be submitted through a local health unit to a laboratory for examination whether or not there have been human exposures. This will help determine the extent of the disease. Specimens should be carried to the health unit which in turn will ship the head properly packaged to the nearest laboratory.

If the animal is large, such as a fox, dog, or cow, the head should be severed just above the shoulders and only the head sent to the laboratory. If the animal is small, the entire animal may be sent. Sanitary precautions, such as the use of gloves, should be observed for the protection of the handler. If ectoparasites are present the animal should be dusted with an insecticide before handling.

Should the specimen be shipped by an individual or agency other than a local health unit, the specimen for shipment should be placed in a water tight container. This container should then be placed in a larger water tight receptacle containing ice. The inner container should contain nothing other than the specimen. Salt or dry ice should not be placed in either container. If delivery is delayed the specimen should be refrigerated but not frozen. A history data slip obtainable from any parish health unit should be completed and attached to the outer container.

The State Department of Health labora-

tories perform direct microscopic examinations of brain specimens in search for intracytoplasmic inclusion bodies or Negri bodies which are specific for rabies. Their identification makes it possible to diagnose the disease very quickly and with certainty. If, however, they are not found it can not be assumed that the disease is not rabies, since a certain number of cases of the disease do not exhibit recognizable Negri bodies, and in others they are sparse and may be overlooked. If, therefore, the microscopic examination of a brain specimen does not reveal Negri bodies, animal inoculation tests should be performed. Large scale animal inoculation studies of routine specimens submitted for diagnosis have shown that 10 to 15 per cent of those positive for rabies had been missed by direct microscopic examination for Negri bodies.⁶ The absence of Negri bodies in rabid animals is considered in some cases to be due to a short duration of the disease before the animal is killed or dies. Therefore, the importance of holding biting animals in isolation rather than killing them immediately is evident. In addition to allowing for a better chance of obtaining a positive microscopic examination, it permits observation for symptoms of rabies.

Animal inoculation tests are performed in the State Department of Health laboratories in New Orleans and Lake Charles. The test animal used is the white mouse. The intracerebral injection of brain tissue containing rabies virus into these animals produces a typical infection with symptoms appearing in six to ten days. If street virus is present Negri bodies are consistently produced.

Because of the tremendous number of negative specimens found on direct microscopic examination, 1,254 in 1956, animal inoculation tests are performed routinely, in Louisiana, only on specimens from animals that have caused human exposure. Since the New Orleans and the Lake Charles Laboratories are the only laboratories doing animal inoculation tests, the other laboratories ship portions of Negri

negative specimens to New Orleans. Therefore, all Negri negative specimens from animals causing human exposure are tested by animal inoculation.

HUMAN RABIES PROBLEM

Relatively few people die of rabies each year in the United States but the number of human exposures to the bites of animals, either proven to be rapid or of undetermined status, runs into tens of thousands. The number of persons exposed and given antirabies vaccine treatment annually in Louisiana is unknown, but it is certain that the figure is extremely high considering the high incidence of proven cases of animal rabies.

When rabies is present in an area, every biting animal must be suspected of having rabies until proven otherwise. All wounds inflicted by biting animals should be thoroughly cleansed immediately with soap or detergent solutions and water. Zephiran chloride in a 1 per cent solution has proved effective in inactivating the virus in laboratory animals.⁷ The commonly used antibiotics have no beneficial effect other than combating bacterial infection which may be present at the site of the wound.

Subsequent treatment depends on the status of the biting animal and the site of the wound. If the biting animal can be caged, or restrained, the physician should advise that the animal be kept alive, restrained and under the surveillance of a veterinarian for ten days. The course of treatment will be influenced by reports on the clinical status of the animal during the period of observation. If the animal dies or is killed within ten days the brain should be examined for rabies. The laboratory request slip should show that a human was bitten and the animal died naturally or was killed. If this is done and Negri bodies are not found, animal inoculation studies will be done.

Table 2 is a summary of indications for specific postexposure treatment recommended by the Expert Committee on Rabies of the World Health Organization.⁶ If every physician would adhere to the recommendations set forth in this table and not be

TABLE 2
INDICATIONS FOR SPECIFIC POST-EXPOSURE TREATMENT

Nature of Exposure	Condition of Animal		Recommended Treatment
	At time of exposure	During observation period of 10 days	
I. No lesions Indirect contact only	Rabid	—	None*
II. Licks			
1. Unabraded skin	Rabid	—	None*
2. Abraded skin and abraded or unabraded mucosa	(a) Healthy	Healthy	None
	(b) Healthy	Clinical signs of rabies or proven rabid	Start vaccine at first signs of rabies in animal
	(c) Signs suggestive of rabies	Healthy	Start vaccine immediately. Stop treatment if animal is normal on 5th day after exposure**
	(d) Rabid, escaped, killed or unknown		Start vaccine immediately
III. Bites			
1. Simple exposure	(a) Healthy	Healthy	None
	(b) Healthy	Clinical signs of rabies or proven rabid	Start vaccine at first signs of rabies in animal
	(c) Signs suggestive of rabies	Healthy	Start vaccine immediately. Stop treatment if animal is normal on 5th day after exposure**
	(d) Rabid, escaped, killed or unknown; or any bite by wolf, jackal, fox or other wild animal	—	Start vaccine immediately
2. Severe exposure (Multiple; or face, head or neck bites)	(a) Healthy	Healthy	Hyperimmune serum immediately. No vaccine as long as animal remains normal
	(b) Healthy	Clinical signs of rabies or proven rabid	As in III, 2, (a), but start vaccine at first sign of rabies
	(c) Signs suggestive of rabies	Healthy	Hyperimmune serum immediately, followed by vaccine. Vaccine may be stopped if animal is normal on 5th day after exposure.
	(d) Rabid, escaped, killed or unknown. Any bite by wild animal	—	Hyperimmune serum immediately, followed by vaccine

Hyperimmune serum to be effective must be given within 72 hours of exposure.

These indications apply equally well whether or not the biting animal has been previously vaccinated.

* Start vaccine immediately in young children and patients where a reliable history cannot be obtained.

** Alternative treatment would be to give hyperimmune serum and not start vaccine as long as animal remained normal.

influenced by undue apprehension of the patient when confronted with the problem of a human exposure, the number of persons subjected to treatment unnecessarily would be reduced to a minimum. Sellers⁸ once stated:

"It is not hydrophobia but rather rabiphobia which constitutes the major and most troublesome problem to the practicing physician and health officer. The administration of antirabic vaccine to persons actually bitten or scratched by the teeth of known or suspected rabid animals is a relatively simple and justifiable procedure regardless of the outcome, in that the danger of the disease is far greater and more serious than any ill effects from the vaccine but for exposures other than actual bites the danger of treatment complications far exceeds that of either rabies or rabiphobia."

The presence of nervous tissue in the vaccine may give rise to local allergic reactions manifested by angioneurotic edema, fever, adenopathy, and shock, or even to more severe neuromyolytic manifestations, known as "treatment or post-vaccinal paralysis," and even death.

Tissue vaccine reactions may occur during the course of treatment, or more often following the first injection, to a person that has previously received rabies vaccine. To offset this danger the Expert Committee on Rabies of the World Health Organization^{6,9} suggests a change to a vaccine produced from the brain tissue of a different species of animal. (i.e., from rabbit brain tissue to sheep brain tissue.) If, however, the reactions are of a neuromyolytic nature the course of treatment should be discontinued immediately.

As to the question of re-exposure following previous antirabies vaccine treatment the Expert Committee^{6,9} recommends the following:

"—if this situation arises within three months of the first course of vaccine, no further treatment is necessary unless the second exposure is of a severe type. If the interval is between three and six months two reinforcing doses of vaccine, one week apart are indicated, whereas if more than six months' interval has elapsed the treatment should be on the same basis as if it were an original exposure."

ANTIRABIES SERUM

Antirabies serum is a relatively new product produced by hyperimmunizing

horses with a fixed rabies virus. It is recommended as an adjunct to vaccine treatment particularly in the treatment of persons bitten about the head, neck, and shoulders, in which case the incubation period is likely to be short. The protection is short lasting since the hyperimmune serum does not stimulate antibody production but confers only a passive immunity. It is intended only to bridge the gap between exposure and the time when the vaccine induces effective antibody responses.

The serum is administered intramuscularly and, when possible, in and around the wound site. For best results it should be administered as soon as possible after exposure and preferably within seventy-two hours, but even later if the exposed person is seen for the first time. Since rabies antiserum is of equine origin patients should be questioned carefully regarding allergic sensitivity and should be tested for sensitivity before the serum is administered. Reactions to the serum do occur. They should be anticipated and managed as any foreign protein reaction would be managed.

PREVENTION OF HUMAN EXPOSURE

The majority of human exposures could be prevented if every community in the state would enforce the state law requiring annual vaccination of dogs against rabies, and would provide for the collection and destruction of all stray dogs. If these two things were done in every parish of the state many persons would be saved heartache and possible reaction to the vaccine, and physicians would not so often be placed in the position of deciding whether or not to administer a life saving but dangerous vaccine.

SUMMARY

The prevalence and geographical distribution of rabies by species in Louisiana for the period 1946-1956 is reported. The clinical manifestations and the laboratory procedures for confirming the diagnosis of rabies in animals are discussed. Recommendations for handling animals that have caused human exposures, procedures for

shipping animal heads to the laboratory, and the location of laboratories in Louisiana with rabies diagnostic facilities are given. The handling of humans exposed to rabid animals, including wound treatment and the indications for the use of antirabies vaccine and hyperimmune serum, are discussed.

REFERENCES

1. Johnson, H. N.: Rabies, *Ann. New York Acad. Sci.*, 48:361 (April 10) 1947.
2. Scatterday, J. E., and Galton, M. M.: Bat rabies in Florida, *Vet. Med.*, 49:133, 1954.
3. Courter, R. D.: Bat rabies, *Pub. Health Rep.*, 69:9, 1954.
4. Burns, K. F.; Farinacci, C. F.; Murnane, T. G.; and Shelton, D. F.: Insectivorous bats naturally infected with rabies in Southwestern United States, *Am. J. Pub. Health*, 46:1089, 1956.
5. Pawan, J. L.: Rabies in the vampire bat of Trinidad with special reference to the clinical course and latency of infection, *Ann. Trop. Med.* 30:401, 1936.
6. World Health Organization. Expert Committee on Rabies. Second Report. Technical Report Series No. 82, Geneva 1954.
7. Shaughnessy, H. J.; and Zichis, J.: Treatment of wounds inflicted by rabid animals, *Bull. World Health Organization*, 10:805, 1954.
8. Sellers, T. F.: Rabies, the physicians' dilemma, *Am. J. Trop. Med.* 28:453, 1948.
9. World Health Organization Expert Committee on Rabies. Report on the First Session. Technical Report Series No. 28, Geneva, 1950.

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INFORMATION ABOUT HOME-TOWN MEDICAL TREATMENT FOR VETERANS *

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The Veterans Administration is initiating, on a trial basis, a new method for authorizing home-town medical treatment for *selected* eligible veterans.

In accordance with established policy, fee-basis medical services are customarily authorized in monthly cycles, upon receipt of a request from the treating physician for initiation and/or continuation of treatment. These requests are subject to review and approval of the Chief Medical Officer, and continued treatment is re-authorized for a like period (30 days). Under the new procedure, an exception will be made to the above practice by field

stations of the V.A. in procuring medical services from participating physicians for *selected* V. A. outpatients. The outpatient treatment folders of eligible veterans presently under authorized fee-basis care are being screened as expeditiously as possible, and those *selected* patients meeting the following criteria will be designated as "Category LT (long-term treatment) Outpatients":

1. Immediate supervision is exercised by a properly qualified fee-basis physician who has evidenced his desire to cooperate with the V.A.

2. Treatment will be required over a protracted period of time.

3. The veteran has demonstrated his acceptance of treatment services made available by the Government by keeping appointments regularly unless there were valid reasons to the contrary.

4. Professional and ancillary services required by the veteran on a recurring basis can be forecast within reasonable limits.

Letters will be directed to the physician from whom the *selected* patient is receiving treatment, requesting his concurrence in the establishment of this procedure. Upon concurrence of the fee-basis physician, the veteran will also be notified concerning the long-term treatment method.

Under the current procedure, the V.A. authorizes visits only on a month-to-month basis. The letter of authorization (VA Form 10-2568a) is mailed to the physician, designating the number of treatments authorized that month. At the end of the treatment month, the physician fills in the dates of the patient's treatments, writes his progress notes and returns the form for billing purposes. The physician also completes an attachment (VA Form 10-2690b), on which he indicates the number of treatments to be required for the following month.

The above procedure has limitations. Mail difficulties delay correspondence between the V.A. office and the physicians. The physician must request monthly renewal of his authorization. There are

* Received from and published at the request of Veterans Administration, Regional Office, New Orleans, La., April 15, 1957.

† Chief Medical Officer.

times when the physician forgets, or is negligent in requesting renewal of treatment authorization; this results in a hardship on the veteran needing continued care.

Under the new trial procedure, we will be able to authorize for *selected* patients treatment for a longer period than one month. The V.A. office will forward to the fee-basis doctor's office a form indicating that the Veterans Administration has authorized the veteran's treatment for a longer period. Instead of returning the V.A. forms each month, the physician will now be asked to submit his bill each month on his own letterhead. He must personally sign this letter, and the letter must include the statement, "I certify this bill is correct, and payment therefor has not been received."

This new system will have many advantages, especially for the veteran requiring long-term medical planning, when the number of treatments per month is constant. It will enable the physician to give uninterrupted treatment without waiting to receive his authority each month. Because this is a new program, we are proceeding cautiously. The patients to be included are being carefully selected. We plan to arrange a gradual expansion to include other veterans, once it is shown that the new system is workable, and has demonstrated its advantages.

In this new method, progress notes are not necessary each month. However, at the end of each three-month period, we shall require a summary of the patient's progress during that period. This summary will then form the basis for our decision to continue this authorization practice or revert to the monthly procedure.

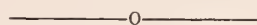
Travel necessary in the CATEGORY LT cases will also be authorized for a longer period.

This revised system has no effect on other aspects of our fee-basis program. X-ray and laboratory studies will be provided as usual upon request. As heretofore, prescriptions may be mailed to our

Pharmacy or taken to a home-town pharmacy. Also, patients under fee-basis treatment will still be called in to the V.A. office for periodical evaluation.

The success of this plan will depend in large measure upon the effectiveness with which orientation is provided to participating physicians to acquaint them with the special relationships which exist in the processing of CATEGORY LT cases. We feel that the implementation of this plan will be of definite value to both the veteran and the fee-basis physician. In our opinion, it will save time for the participating physicians, and will enable them, at the end of each three-month period, to give us a better summary of the patient's condition and his response to treatment than we have been able to obtain previously. Also, we feel that the veteran will be able to secure continued and proper treatment.

If there are any questions that fee-basis physicians may have concerning this program they are invited to communicate with the V.A. stations at New Orleans or Shreveport, whichever is closer, by mail or 'phone.



SOME IMPORTANT DEVELOPMENTS PRESENTLY INFLUENCING DENTAL HEALTH IN AMERICA*

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Several things have occurred in the past which adversely influence, in one way or another, the dental health and welfare of the American people at the present time; and will continue to do so in the nearby future. I wish to direct attention to four separate developments that have taken place during the past forty years which will have to be discredited and discontinued, and their misleading influences will have to be overcome for people to en-

* Studies promoted by facilities to which the author has had access at The School of Medicine, Tulane University of Louisiana, and by aid for equipment and supplies provided by the University.

joy the highest degree of oral cleanliness and dental health. They are:

1. Improper methods (Charters, Stillman, others) of brushing the teeth;
2. Placing undue emphasis upon brushing the teeth immediately after each meal;
3. Artificial fluoridation of communal water supplies;
4. Topical application of fluorides.

1. IMPROPER METHODS (CHARTERS, STILLMAN, OTHERS) OF BRUSHING THE TEETH

During the first quarter of the present century much attention was directed to methods of brushing the teeth, with the idea of massaging the gums at the same time. Alfred Fones was a pioneer in the field of oral hygiene, and especially in training and in promoting the work of the dental hygienist. He established the first school^{1, 2} for their training. He also published detailed instructions³ for the home care of the mouth, and got out several promotional pamphlets and a textbook intended especially for dental hygienists. A reprint of the fourth edition of this book,⁴ in 1942, describes the same method of brushing the teeth as he first described.³ It has been referred to as the "big circle" method and consists particularly of brushing the buccal and labial sides of the teeth, held in occlusion, with a wide circular movement to include also the gums high and low over the teeth. A large soft brush was used with the idea of massaging but not injuring the gums. To his credit Fones advocated vigorous scrubbing of the occlusal surfaces of the teeth and, as a part of his mouth hygiene, he also included cleaning of the proximal surfaces about the contact areas with dental floss.

In the Charters method^{5, 6} the bristles are directed into the embrasures between the teeth, pointed somewhat occlusalward, the sides and not the ends resting upon the gums. Short rotary movement of the brush is supposed to clean the teeth within the sulci and at the same time to produce "an ideal massage of the gums" by pressure with the sides of the bristles. He warns especially "do not allow the points of the bristles to rest upon the gums".

In the Stillman method⁷⁻⁹ the bristles are placed obliquely to the long axis of the teeth or at an angle to the gingival surface and directed apically, the bristle ends resting partly on the gingivae and partly on the cervical portion of the teeth. "The bristles should never be pointed at right angles to the surface of the gingivae, for in this position they may cause puncture. Pressure on the gingivae is desired with the least amount of friction or injury." "This act is repeated several times and the handle is given a slight rotary motion but not enough to cause the bristle ends to move from the positions in which they were first placed".

Numerous modifications, especially of the Stillman method, have been advocated and taught. The chief of these provides that the sides and ends of the bristles be applied in a sweeping movement towards the occlusal, from above downward for the uppers and from below upward for the lowers. Many dentists believe and insist that this method must be followed.

In a book of more than 700 pages on the use and abuse of the toothbrush Hirshfeld¹⁰ inclines to prefer the Charters method which differs from the Stillman method essentially in the direction of the bristle ends—in the former they point occlusally, in the latter apically. He says these two methods are superior to others generally in that the stroke used is shorter and less forceful, thus minimizing the "tendency to gingival traumatization and tooth abrasion". Throughout his discussion, the idea prevails of taking care not to puncture or injure the gums with the ends of the bristles. He urges especially to avoid "penetration of the gingival crevices by the bristle ends". It should be noted that this is exactly the opposite of what is absolutely necessary. The tooth must be cleaned within the gingival crevice. This can be done, to the extent it can be done with the brush, only by applying the ends of the bristles of the right kind of brush¹¹ to the areas on the tooth within the crevice to be cleaned.

These improper methods or modifica-

tions of them have been advocated by leading authorities and taught in dental schools so long and so positively until they have become firmly established in dental practice. The dentist who advises his patients in this regard recommends the particular method or modification which he accepts as the best.

In papers or in discussions wherein the method of brushing is given the Charters or Stillman method or a modified Charters or Stillman method is usually specified. Often the speaker refrains from being specific and calls it "an approved method" or "an accepted method", neither of which means anything definite.

One does not find in the writings of the originators and promoters of these methods of brushing the teeth any indication that their opinions in this regard were based upon accurate personal knowledge and experience as to the local microscopic etiological and pathological conditions in the two principal diseases affecting the teeth—caries and periodontoclasia. These diseases are caused by microscopic organisms, the lesions at first are microscopic in extent, they advance microscopically, the tissues involved are composed of microscopic elements, and the destructive processes are microchemical. Therefore, one can know of his own knowledge and understand these conditions upon which effective prevention must be based, only through microscopic studies and experience.

Less than 25 per cent of the loss of teeth in this country results from caries; more than 75 per cent from periodontoclasia. Periodontoclasia begins in childhood and is a universal disease of man. Everyone, at anytime, has lesions of some stage of activity and advancement, and these can be demonstrated by proper microscopic examination of suitable material from the locations concerned. Practically all people sooner or later lose their teeth from this disease, if they live long enough. It prevails among people of all races and in all levels of civilization, the rate of progress being influenced by the oral hy-

giene habits and methods of the individual. It affects the most cultured and intellectual people of the world and even more severely, the primitive races,¹²⁻¹⁴ including the African bushman¹⁵ whose habits and characteristics, in many respects, are more like those of lower animals than of man.

Caries is limited to people whose diet contains the necessary fermentable (mostly refined) carbohydrates. The initiation and progress of the lesions of this disease also are influenced largely by the effectiveness of the personal oral hygiene habits of the individual. At the present time very few people know and accurately follow, or have any way to learn the exact method which must be followed to prevent caries. Consequently, almost all people in this country have more or less caries lesions, and most of these tend to progress in time, even though they receive the best treatment and restorations that can be given. Many of the teeth in which caries lesions originated in childhood are ultimately lost, however good the dental service may be. This can be prevented only by preventing the lesions before they start.

The purpose of personal oral hygiene is maintenance of oral cleanliness and prevention of both caries and periodontoclasia, and their consequences. The purpose is accomplished however only to the extent the method or technic, of which proper use of an appropriate toothbrush is an important part, removes and prevents reaccumulation of harmful amounts of the essential etiological material at the locations where the lesions of these diseases originate and advance.

The confusion and inadequacy of information regarding these two principal diseases is indicated in testimony¹⁶ given by Dr. Harry Lyons on February 29, 1956, before a subcommittee of the U. S. Senate. He called attention to the vast and complex problems of tooth decay and its infectious sequelae, and stated that "the so-called gum diseases are essentially complete mysteries as far as their causes and prevention are concerned". He was speak-

ing as president-elect of the American Dental Association, as dean of the School of Dentistry of the Medical College of Virginia, and as a member of the National Advisory Dental Research Council for the National Institute of Dental Research.

Caries lesions originate only at locations where heavy bacterial film (plaque material) is continuously present. To prevent initiation and advancement of such lesions it is necessary to prevent or minimize the accumulation and retention of this material which is composed largely of filamentous types of micro-organisms having one end attached to the tooth surface and the other extending outward towards the surface of the film mass. This characteristic has been illustrated^{17, 18} and has been adequately documented¹⁸ by references to numerous other specific illustrations in the literature. These fundamental facts can be confirmed by microscopic examination of plaque material removed from extracted tooth specimens or of sections of enamel cuticle removed with plaque attached.

Removal of this material with the toothbrush from the locations to which the ends of the bristles can be applied, is only partial at best. There are many organisms left and these tend to grow and reaccumulate, thus renewing the film pad or plaque. By repeating the cleaning at suitable intervals harmful reaccumulation and caries producing conditions at the particular locations are prevented.

Almost all caries lesions in young people (under adult age) originate either in the pit and fissure depressions on the occlusal surfaces or on the proximal surfaces around the contact area. The vulnerable areas on the occlusal surfaces can be cleaned well by vigorous application of the ends of the bristles of the toothbrush. It is physically impossible to clean the proximal surfaces where caries lesions originate by any method of brushing with any kind of brush. These areas can be cleaned adequately only by passing the right kind of dental floss¹⁹ through the contact area between the teeth and back

out, thereby removing most of the material which is essential for caries activity.

The next most frequent location for caries lesions to originate is in the cervical region at the cemento-enamel junction. Normally this junction line is covered by the epithelial attachment²⁰ and is not exposed to the necessary conditions (bacterial plaque) for caries. After the gum recedes sufficiently (usually not before adult age) to expose this line at any place caries lesions may begin, if the location is not kept sufficiently clean. This can be done by the use of the toothbrush only to the extent the ends of the bristles of suitable characteristics are vigorously applied to the areas to be cleaned. Please note that this is exactly the opposite of the improper methods of brushing referred to above.

The bristles of the brush cannot reach and clean the interproximal cervical region. This can be done only by proper application of the right kind of dental floss¹⁹ to the particular location.

Periodontoclasia (gingivitis, "pyorrhoea alveolaris", "periodontal disease") is a purely local, continuous, inflammatory disease resulting from local etiological conditions. At anytime after a tooth has erupted and attained its occlusal level, suitable material from the gingival crevices, especially the interproximal crevices, always contains from a few to many pus cells; and sections of tissue from this location show more or less inflammation upon microscopic examination. The intensity or activity of this early stage inflammation (gingivitis) varies greatly in different people and in different locations in the same mouth, influenced largely by the oral hygiene conditions present. This early unrecognized and usually symptomless gingivitis constitutes the early stage of a progressive pathological process which continues to advance and never ends until the involved tooth is finally lost (extracted or exfoliated), usually after middle life, sometimes earlier. Much confusion has resulted from failure to recognize the early stage of this disease.

Kronfeld²¹ says "the presence of a small number of inflammatory cells in the sub-epithelial tissues can be considered as indicating a gingivitis; but if it is, almost every human gingival crevice would have to be considered pathological which would only cause confusion".

All periodontoclasia lesions begin at the gingival margin where bacterial material (plaque) is continuously produced and is retained on the tooth at the entrance to the gingival crevice. The bacterial mass tends to advance (grow) into the crevice and cause irritation and microscopic inflammation (gingivitis) of the crevicular epithelial tissue resting against it. In time concretions (mostly calculus) form on the surface of the tooth in the deeper part of the bacterial mass. This is composed largely of filamentous types of micro-organisms attached to the tooth. The foreign material on the tooth and extending into the crevice now consists of the hard concretion overlaid by the film of growing bacterial material, and this is mechanically more irritating to the gingival tissue resting against it. The inflammation and suppuration resulting from the advancement of this foreign material on the surface of the tooth within the crevice (now a "pyorrhoea" lesion) continues (usually over long periods of time) and the attachment of the gum on the tooth recedes.²⁰ As the process advances inflammation and resorption of the supporting tissues—periodontal tissue and alveolar bone—ensue and progress as long as each particular tooth is retained.

At all times this foreign material is found present on the surface of the tooth within the crevice, thus making the tooth itself, in effect, a foreign body extending into the chronically inflamed and suppurating surrounding tissue. This fundamental fact has been illustrated^{17, 18} and has been adequately documented¹⁸ by references to numerous other specific illustrations in the literature. It can be confirmed by microscopic examination, also with the dissecting microscope, of specimens of extracted teeth suitably stained

to bring out the landmark²² which indicate the location of the outer border of the epithelial attachment. This locates the very bottom of the lesion when the tooth was in the mouth. The bacterial film always extends to this line²³ and the underlying subgingival calculus extends²⁴ almost to it.

The only way by which the early stages of this disease and further advancement of existing lesions can be prevented is by cleaning the teeth within the gingival crevices sufficiently frequently to prevent reaccumulation of the etiological foreign material. This can be done with the toothbrush only to the extent the bristles of appropriate dimensions¹¹ are directed into the crevices and reach the material to be removed. This is exactly the opposite of the improper methods of brushing referred to above.

The bristles can be directed into the exposed crevices in the sulci between the teeth but they cannot be applied to material in the deeper part of the interproximal crevices. This can be removed by the use of the right kind of dental floss²⁵ carried to the very bottom of the crevice, but in no other way now known.

Scales of calculus must be removed by a dentist who understands the conditions that exist. Although calculus does not reform in locations that are cleaned daily, occasional cleaning and rechecking by the dentist is needed to discover any locations that may have been missed by the daily routine.

A method of personal oral hygiene based upon the above indicated fundamental facts has been designed, by which the highest degree of oral cleanliness and dental health can be maintained. Both caries and periodontoclasia are practically prevented and further advancement of existing lesions, especially early stage lesions, is substantially retarded or prevented. I have referred to this method as "the necessary method of personal oral hygiene",¹⁷ "the right method of personal oral hygiene", "an effective method of personal oral hygiene".¹⁸ In speaking to

dentists who have learned and are teaching it to their patients or to people who know and follow it, I usually refer to it as "our method of personal oral hygiene".

Anyone who knows of his own knowledge and understands the local microscopic etiological and pathological conditions in the two principal diseases already knows in advance that approximately this exact method is necessary and that any neglect or deviation from it would be less effective to the extent of such neglect or deviation.

Improper methods of brushing the teeth not only are not effective but teaching and promoting them misleads people and detracts from their learning and following the method of personal oral hygiene which is absolutely necessary.

2. PLACING UNDUE EMPHASIS UPON BRUSHING THE TEETH IMMEDIATELY AFTER EACH MEAL

In 1938 Stephan²⁶ designed a microcolorimetric technic for determining the pH of plaque material removed from the surfaces of teeth, and of debris from cavities. In 1940,²⁷ employing a delicate antimony electrode, he measured the pH of plaques and cavities in situ. He found that the lowering of the pH of the plaque reaches its greatest intensity during the first thirty minutes after a glucose rinse and that little or none of the effect remains after two or three hours. Fosdick and associates,^{28, 29} testing plaque material from teeth for pH with a microglass electrode, found similar rapid reduction after ingestion of carbohydrates.

Stephan³⁰ also found that there is a quantitative difference in the intensity and duration of the acidity produced by carbohydrates on the teeth of caries-free and caries-active individuals, the pH drop being greatest in cases with extensive caries activity.

With the idea of making practical application of the above information, dentists and dental authorities have advocated brushing the teeth immediately after each ingestion of sugar-containing food.³¹ The American Dental Association got out a pamphlet³² advocating the procedure.

Commercial interests, taking advantage

of this information and especially the later clinical report of Fosdick,³³ have extensively and continuously advertised the idea that the teeth must be brushed immediately after each meal. This is done in connection with appealing, extravagant and misleading advertising for the purpose of promoting the sale of their "superior dentifrices". For several years anyone who reads current periodical literature, listens to the radio or watches T.V. programs has been repeatedly advised to brush his teeth promptly after each meal.

In 1950, Fosdick published³³ the results of an extensive study carried out over a two year period by a group of 10 dentists on a total of 946 (423 controls, 523 test subjects) college students in 7 institutions. The test subjects were required to brush their teeth after each meal. The controls were allowed to follow their usual procedure. Both clinical and x-ray examinations were employed. Statistical methods were employed in analyzing the data. The results varied considerably when different methods of estimating them were used but a reduction in the neighborhood of 50 to 60 per cent in the average number of new carious surfaces over the two year period was indicated.

The test subjects were instructed to rinse the dentifrice from the mouth after each brushing and when brushing was impossible to rinse the mouth thoroughly with water. The author³³ recognized that the rinsing and not the brushing may play a large part in the results. "It is obvious that the toothbrush or the abrasive cannot physically reach the inner portions of the proximal areas. Hence it is to be expected that the forcible dilution of the material in these areas might account for the results. There is considerable evidence to substantiate this possibility". Thorough rinsing of the mouth soon after each meal not only dilutes but it washes away much of the soluble material, in addition to particles of food material on the teeth.

Brushing the teeth immediately after meals, if properly done with the right kind of toothbrush, probably does no di-

rect harm, but emphasizing and promoting it tends to encourage placing undue reliance upon it and to detract from the essential and entirely effective cleaning of the teeth at night before retiring. It only promises some preventive effect against caries. Rinsing vigorously without the brushing or dentifrice does about as much good.

Brushing alone, in the usual way, could have little or no preventive effect upon the other more important disease, periodontoclasia, for the reason that it does not clean the proximal surfaces within the gingival crevice where the etiological material (bacterial film and calculus) accumulates.

Since the teeth must be cleaned effectively (by the proper use of the right kind of both toothbrush and dental floss) every night before retiring, and they should also be brushed upon arising in the morning, brushing also after each meal, making a total of 5 times a day, would increase any harm that may result from over-vigorous use of current harsh inappropriate brushes. "Nothing has been so destructive of tooth structure or has caused so much recession of the investing tissue as the use of stiff, ill-shaped brushes." Most people who have habitually brushed their teeth for several years with the usually employed brushes have worn back the edges of their gums over the high places to some extent.

Brushing the teeth immediately after each meal is not convenient or practical and will not be carried out by many people. Since, it is not necessary, and of itself, is not of any considerable benefit, placing undue emphasis upon it tends to mislead and confuse the public and thereby to unfavorably influence dental health.

3. ARTIFICIAL FLUORIDATION OF COMMUNAL WATER SUPPLIES

Previous observations relative to "mottled enamel"³⁴⁻³⁸ led to the discovery by Churchill,³⁹ in 1931, that this condition was caused by the fluoride ion in the water supply. Dean and Evolve⁴⁰ concluded that 1 ppm fluoride in drinking water was not harmful and therefore "has

no public health significance". Dean⁴¹ in 1942, announced that caries incidence in children was about 60 per cent less in areas where the fluoride was at or above 1 ppm, as compared with nonfluoride areas.

This and much other confirmatory evidence of substantial reduction in caries damage from naturally fluoridated water provided a logical and supposedly sound basis for artificially adding fluorides to communal water supplies, up to what was considered to be the optimum level of 1 ppm. The catch was, and still is, the unwarranted assumption that this powerful chemical, in such small doses, has no harmful effect upon other organs and tissues of the body; while at the same time it is capable of profoundly affecting the teeth, and in some unknown but supposedly harmless way, of significantly reducing the incidence and retarding the pathological process of caries. Just why fluoride selects only the teeth to thus favorably affect or how this beneficial action by it is brought about have remained confused or unrecognized. The general belief is that such teeth, which contain somewhat more fluorine are therefore more resistant to caries activity.

Several separate study projects were set up for testing artificial fluoridation as compared with little or no fluoride in the water. Progress reports⁴²⁻⁵² from time to time, and now some final reports after ten years⁵³⁻⁵⁶ all confirm the earlier observations that caries damage is significantly reduced in areas of naturally fluoridated water and about as much where water is artificially fluoridated to 1 ppm. or more. A liberal over-all estimate from such of these reports as I have seen would be an average of about 50 per cent reduction in the caries rate in children. Some of the more favorable age groups show somewhat greater effect.

These results would be well worthwhile if they were secured without harmful effect, either to children who receive the most caries retarding benefit or to older people who benefit less or not at all. They

are not. The reduction in the incidence of cavities in teeth (the advanced stage of caries) from fluoridated water results entirely from the contemporary increase in periodontoclasia (gingivitis) activity. This has not been recognized by the originators, promoters, and advocates of artificial fluoridation. However, it is a fact, nevertheless. The incidence and progress of caries lesions are reduced in the same way by increased gingivitis activity from any other cause, such for instance as Vincent's disease, numerous systemic diseases and conditions, certain vitamin deficiencies and certain other chemical poisons.

In order to understand the relationship between caries and periodontoclasia and the influence of ingestion of fluorides, it is necessary to be clear on certain fundamental facts relative to the nature of the pathological process, the prevalence of the early stage lesions of these diseases and how they advance.

Enamel caries lesions originate at certain locations where fermentable carbohydrates are retained and minute quantities of acids are produced by bacterial action. Caries does not occur without carbohydrates or without bacteria. Traces of acids produced at frequent intervals, or continuously, partially decalcify the enamel giving rise to a chalky white condition in which the enamel at the particular location is softer ("chalky enamel") and can be dug into with a sharp instrument. If the etiological conditions continue, the partial decalcification advances into the enamel and sooner or later may reach the dentin. Disintegration of chalky enamel may result in a break in the surface producing a depression or cavity, small and shallow at first, which continues to enlarge or advance. After cavity formation, and sometimes before, the caries lesion at accessible locations usually may be recognized and diagnosed. This should be considered the advanced stage caries lesion. There was a considerable period of time however, from the normal unaffected condition at the particular location, to this

clinically diagnosable caries lesion. During this entire period the early unrecognized caries lesion at first is microscopic, but it usually progressively increases in size and in depth. The rate at which the process in each lesion progresses is determined by several variable factors, some of which may accelerate, others may retard it.

The most important factor in retarding proximal lesions is interproximal gingivitis (early stage periodontoclasia). This is always present to variable extent and in variable degrees of activity, from microscopic lesions only to active visibly inflamed lesions which bleed easily on pressure. Inflammatory exudate, which contains more or less blood serum and therefore has approximately the same pH as blood,⁵⁷ tends to neutralize or counteract acids produced in the environment and thereby retard the caries process. If gingivitis is sufficiently active the caries process is slowed down or may be prevented from reaching the stage for clinical diagnosis. Many such retarded early stage lesions remain inactive indefinitely, others may progress slowly and break down in later life, leading to the impression that new caries lesions have developed. Actually practically all enamel caries lesions originate within the first year or two after the eruption of any given tooth.

The prevalence of early stage proximal caries lesions, either active, retarded, or inactive, in any given population can be learned only by examination by proper technic of a considerable number of extracted tooth specimens. Good technic for this purpose is to dip the specimen in 5 to 10 per cent HCl for less than thirty seconds to release the enamel cuticle, dip in water followed by 0.25 per cent acid fuchsin to improve contrasts and differentiate other tissues from enamel, and then examine under the dissecting microscope. The depth to which such early stage lesions extend can be satisfactorily observed if the specimen is split through the lesion with a double side flat separat-

ing disc or other suitable instrument.

I have examined many hundreds of specimens in this way. Lower incisors seldom decay. If these are omitted I have found proximal caries lesions in from 75 to more than 90 per cent of the specimens in the different collections examined. Many of them, even in those from older people, are still in the chalky enamel stage and have not reached the cavity stage. Their advancement has been retarded or prevented for many years. It is not unusual to find some such lesions with more or less calculus over them, indicating that there was no acid action at the particular location, at the time it was deposited, or since that time.

Reports have shown that the caries preventive effect of fluoride ingestion is remarkably selective⁵⁸⁻⁶³ relative to location of lesions. The greatest benefit applies to proximal lesions, much less to occlusal or other lesions. Now the Newburgh-Kingston reports^{56, 64} confirm this pronounced selective effect, even where there is only about 1 ppm fluoride in the water. The antacid effect of inflammatory exudate applies especially to the interproximal region and thereby retards proximal caries. Any increase in gingivitis activity, however slight, increases the amount of exudate and correspondingly retards caries activity. The increase from as little as 1 ppm. of fluoride in the water is sufficient to substantially retard proximal caries but it has much less effect upon caries at other locations.

During the past fifteen years I have examined more than a thousand persons, mostly university personnel, more than half of them medical students. These people have been from different parts of the country, mostly from the gulf and other southern states, a good many of them from areas having naturally fluoridated water. On an average, those from known fluoridated areas have sustained less damage from caries than the others. On the other hand, they have sustained more damage from periodontoclasia and often still have more gingivitis. Several

of them stated that although their relatives and acquaintances in their communities did not have much trouble from caries, some of them had more trouble from "gum disease" and sometimes already were wearing dentures at relatively early ages.

People who have naturally fluoridated or artificially fluoridated water will continue to experience less caries and more periodontoclasia damage. Their total dental health, therefore, will be unfavorably influenced as long as these harmful conditions continue.

4. TOPICAL APPLICATION OF FLUORIDES

The idea that resistance to dental decay from ingestion of fluorides may result from incorporation of fluorine in the tooth substance led to topical application of fluorides for prevention of caries. Numerous experiences have been reported,⁶⁵⁻⁷⁷ the results varying from none^{65, 77-80} up to as much as 50 per cent reduction³³ in the caries increment. Most of the observations have been on children. Some reports indicate some slight caries preventive effects in adults^{72, 73} others none.^{77, 79}

At least several separate treatments are considered to be necessary^{81, 82} to secure any marked reduction, 7 to 15 applications⁶⁹ yielding the best results. The preventive effect has been found to subside or to disappear⁸³⁻⁸⁵ following interruption or discontinuance of the treatment.

More recently topical stannous fluoride has been reported⁸⁶ to more effectively prevent caries than sodium fluoride; also to be effective in a toothpaste⁸⁷ although sodium fluoride is not. It has been found experimentally to be markedly superior to sodium fluoride⁸⁸ in protecting powdered enamel from the action of acids. The anti-enzyme effect of stannous fluoride has been shown to be a function of the tin content⁸⁹⁻⁹¹ and not of the fluorine.

In carrying out the topical fluoride treatment a "thorough prophylaxis", which increases the uptake of fluoride,⁹² at one or more of the several treatments in the series is considered to be necessary. Elimination of this reduces the caries preven-

tive effect by one half.^{82, 93} This means that in the most over-optimistic claim of 40 per cent prevention 20 per cent results from the prophylaxis and not more than 20 per cent can be attributed to the fluoride.

In the Shaw publication in 1954, Bibby and Brudevold⁹⁴ tabulated the caries control reported by 16 different authors in 31 separate studies of topical application of sodium fluoride and by 7 authors using other fluorides. In the light of the information in their two tables and of much other information in the literature, and considering that at least 20 per cent reduction results from the prophylaxis and perhaps other influences associated with the treatment, it is evident that topical application of fluorides has little or no specific caries preventive effect.

In 1948, Congress, influenced largely by the urgent request, advice and recommendation of representatives of the U. S. Public Health Service and of organized dentistry, appropriated \$1,000,000 for a nation-wide demonstration and promotion of topical application of 2 per cent sodium fluoride.^{95, 96} The stated purpose was to set up (roughly) one "field demonstration mobile unit for each state; to demonstrate to dentists, dental hygienists, state and local health department personnel, et cetera, the correct technic of making sodium fluoride application to the teeth; and generally to publicize and promote interest in the procedure".

The program was hastily inaugurated in 1948 and vigorously pursued. By October 1950, demonstrations had been conducted by the demonstration teams in 658 communities;⁹⁷ and in many more since that time, all over the country.

This procedure, which has little or no specific caries preventive effect, has been promoted, more or less, also in many other countries. Dean⁹⁸ quotes H. J. Schmidt, secretary general, European Organization for Research on Fluorine and Dental Caries Prophylaxis, as stating that it has been utilized extensively in recent years in Denmark, England, Finland, Ger-

many, Holland, Hungary, Italy, Sweden, Switzerland and Yugoslavia.

Even now this procedure is being extensively publicized and promoted by the American Dental Association, especially through a leaflet⁹⁹ printed and supplied for wide distribution, mainly through dentists in their offices. In this leaflet the Council on Dental Health of the American Dental Association recommends fluoridation of communal water supplies. They also recommend topical application of fluorides for children who do not have fluoridated water; and for those who do, unless they were born in a fluoridated area. They recommend a series of four separate applications at intervals of two to seven days, a course of such treatment to be given preferably at the ages of 3, 7, 10, and 13. They claim that this "will reduce the occurrence of dental decay by an average of 40 per cent".

The first application of fluoride in the series is supposed to be preceded by a thorough cleaning of the teeth, the others not. Any reduction in the occurrence of dental decay from this treatment results largely, if not entirely from the prophylaxis and is small compared with practically 100 per cent prevention which results from the right method of personal oral hygiene. Even if it is believed that there is a specific effect, which there is not, amounting to as much as 20 per cent caries reduction from the fluoride, there is still no need for it.

Continued promotion of topical application of fluorides tends to perpetuate the existing confused information relative to caries and to further postpone the time when those who wish information can learn the fact that prevention of caries depends essentially upon effective personal oral hygiene plus occasional cleaning of the teeth by the dentist, and not upon any kind of medical treatment.

Topical fluoride could not have any preventive effect upon the much more important disease—periodontoclasia—which is always present, more or less, as gingivitis in childhood, and continues to ad-

vance from that time onward. On the other hand, the right method of personal oral hygiene, regularly followed, prevents or controls this disease and at the same time prevents caries and maintains a high state of oral cleanliness.

COMMENT

Many variable factors and conditions contribute more or less to the origin and advancement of the lesions of both caries and periodontoclasia. It is not necessary to know, understand, or control each one of them in order to prevent these diseases. It is only necessary to know and to prevent or minimize the essential local etiological conditions — conditions without which the lesions do not occur. These consist of accumulation and retention of foreign material, composed primarily of bacteria, at the particular locations where the lesions originate. The necessary physical removal of this material at appropriate intervals (at night before retiring) can be accomplished only by the right method of personal oral hygiene. In the light of all presently known facts and experience any neglect of, or deviation from this method reduces the benefits in proportion to such neglect or deviation.

Personal oral hygiene is an individual and a personal matter. Each person must know and accurately follow an effective method. Such a method will be taught only by dentists (or others) who know and follow it themselves. Those who have the information and experience know that the highest degree of oral cleanliness and dental health results.

Any institution, agency, organization, or group concerned with promotion of dental health, not interested in looking into or confirming the fundamental facts upon which effective personal oral hygiene must be based, but wishing only to know the clinical observations of dentists who have had the necessary experience, now have the opportunity. Names can be furnished of dentists of the highest professional standing in their respective communities in 17 different states who have learned this effective method and have been en-

thusiastically teaching it to their suitable patients, some for several years. Their experiences and results surely would be interesting and enlightening to others who have not had such experiences. These dentists could be contacted in any practical way, or better still, they could be brought together in groups (a dozen or several times that many if wanted) for conferences and discussions.

Any one of these dentists could call in numerous patients for illustration of results, who have been following this effective method for several years. Individuals can be presented, of all ages up to past 80, who follow this method and are maintaining practically complete dental health thereby.

Improper and unnecessary brushing discussed under 1 and 2 above tend to correct themselves. The harmful influence of their promotion should gradually decline as more dentists learn and teach, as they surely will do sooner or later, effective personal oral hygiene.

Artificial fluoridation of communal water supplies is rapidly expanding. It has been advocated and promoted originally and continuously by the U. S. Public Health Service and by the American Dental Association. It has been officially endorsed and approved by several of the foremost national (and many regional) scientific organizations, including the American Medical Association¹⁰⁰ and the American Association for the Advancement of Science,¹⁰¹ said to be the largest body of scientists in the world. Recently a group of more than a hundred prominent citizens and leading authorities in their respective fields, many of them physicians, organized a strong endorsement and recommendation¹⁰² of fluoridation, especially for the city of New York.

Under these circumstances of overwhelming authoritative and influential support, artificial fluoridation has been adopted in several hundred communities¹⁰³ in this country. The trend is gaining momentum and promoters of it are meeting with greater success all the time.

A large number of reports of observations in naturally fluoridated districts and now in artificially fluoridated communities all show that the incidence of the advanced stage of caries—cavities and extracted teeth—in young people is reduced by fluoridation. This is accompanied by and results from the contemporary increase in periodontoclasia activity. It only increases the activity of this disease, which all people have from early childhood onward. It does not make sense to fluoridate the water, thereby increasing the activity of this more important disease, in order to lessen the caries activity.

Whenever the relationship between the early stages of the caries process and the early stages of periodontoclasia is better understood and the harmful effect of fluorides in this regard, is recognized and can become known, as surely will occur sooner or later, artificial fluoridation of public water supplies will have to be discontinued. Until that time its unfavorable influence upon dental health will continue wherever it has been adopted.

Sufficient increase in periodontoclasia (gingivitis) activity to retard caries results from 1 ppm fluoride in the water, which is therefore more harmful than beneficial, even to young children. The caries preventive effect is much less in older people but increased periodontoclasia activity results from chronic fluoride intoxication at any age before the teeth are finally lost in later life.

There is considerable difference of opinion as to the influence of association between caries and periodontoclasia.¹⁰⁴⁻¹⁰⁶ Many experienced dental practitioners are of the opinion that there is less caries activity in mouths with the most active periodontoclasia and that the two diseases tend to be mutually exclusive.

There are many reports in the literature relative to the influence of fluoridated water upon periodontoclasia (gingivitis) most of them indicating little or no effect, one way or another. These reports are mostly based upon the PMA index employed by Massler, Schour and associ-

ates.¹⁰⁵⁻¹¹¹ This method attempts to show the incidence of frank overt lesions (the advanced stage of the disease) but does not recognize or throw any light upon the early stage. The method is subject to unintentional and unavoidable bias^{112, 113} and much variation between different examiners.

Most reports of surveys of the caries rate and evaluation of caries control measures are based upon the DMF method of Klein and Palmer.¹¹⁴⁻¹¹⁶ Like the PMA this DMF method attempts to show the incidence of advanced stage lesions and does not recognize or throw any light upon early stage caries. It too is subject to as much as 100 per cent¹¹⁷ examiner bias and variation. It is evident that such methods could be of only limited significance as to the prevalence and the relationship of caries and periodontoclasia, and the effect of control measures.

An impressive report by Russell¹¹⁸ indicates that not only less periodontoclasia but less final loss of teeth was experienced by lifelong residents of Colorado Springs (2.5 ppm fluoride) than was found in a supposedly comparable group at Boulder, Colorado, with fluoride-free water. An example of contrasting report is that of Dale and McCauley¹²⁶ of chronic fluoride intoxication from fumes of hydrofluoric acid. The unexposed control group had an average of 27.4 teeth remaining; whereas those in the exposed group had only 23.3 teeth left, those exposed more than ten years only 21.6.

Greenwood published¹¹⁹ an extensive review of fluoride intoxication up to 1940. There was then abundant evidence (proof) of the serious, irreversible, harmful, systemic effect of fluorine in excessive amounts, and in some not-so-excessive. A large volume of additional information relative to the subject has appeared since that time, mostly supporting the claim that 1 ppm is not harmful and assuming that any harmful effect could be recognized by the methods used.

Mottled enamel occurs in part of the population when there are only 2 or 3 ppm

of fluoride in the water and in almost all when the content is still higher. Long continued intake of increased amounts of fluorine from fluoridated water¹²⁰⁻¹³⁸ or from contaminated air^{120, 139, 140} causes, not only mottled enamel and dental hypoplasia, but also profound changes in the other calcified tissues of the body. These changes include osteosclerosis, thinning of the lamina, increased density, opacity to x-rays, narrowing of the marrow spaces, lack of normal sharpness of the bone outlines, osteophytic formations on various bones, synostosis of various joints, especially of the vertebral column, excessive calcification of tendons, fasciae, ligaments and ligamentous attachments, "bridging" between the vertebral bodies giving rise to stiffness of the back (the so-called poker back), etc. These striking conditions are usually recognizable only after thirty or thirty-five years of exposure but they continue to exist as long as the sufferer lives, and to increase if the exposure continues. Reduction of the bone-marrow spaces, thus impairing and reducing the blood-making tissues of the body not only produces anemia but it also reduces the ability to make back blood in anemia from other causes.

The fact that these severe harmful effects have resulted from 3 times as much, or perhaps 5 to 10 times as much, fluoride in the water as is added in artificial fluoridation leaves room for doubt as to the complete safety and harmlessness of that procedure.

There is much individual variation in susceptibility to the known effects of fluorides, whether it be the beneficial caries retardation in children or the known harmful effects, such as increased periodontoclasia activity, mottled enamel and the cumulative damage to the bones, tendons and ligaments of the body. Citizens, officials, and health authorities of the community have to decide whether to expose the entire population of all ages, and in all conditions of health and vitality, to such possibly harmful effects in order to secure the limited caries preventive effect

of fluoridation of the communal water supply.

The public looks to the U. S. Public Health Service and the dental profession, more than to any other health agency or authority for guidance relative to dental health. As long as they continue to actively advocate and to recommend topical fluoride treatment it will be wanted by many people. Although dentists, after practical experience, may be doubtful of the results they have seen they still will be confronted with the public demand for fluoride applications, as long as the promotional publicity continues.

SUMMARY

Attention has been directed to four separate but somewhat related developments unfavorably influencing dental health, which have taken place during the first half of the present century. Some of the reasons for such influence have been presented.

REFERENCES

1. Editorial. The inauguration of a serious effort to establish a system of education for dental hygienists, *Dent. Items Interest* 36:1, 1919.
2. Fones, A. C.: The dental hygienist in public institutions, *Dent. Items Interest* 37:120, 1915.
3. Fones, A. C.: Instructions for the home care of the mouth, *Dent. Items Interest* 37:356, 1915.
4. Fones, A. C.: *Mouth Hygiene*, (4th ed.), Philadelphia, Lea and Febiger, 1942.
5. Charters, M. J.: Immunizing both hard and soft mouth tissue to infection by correct stimulation with the toothbrush, *J.A.D.A.* 15:87, 1928.
6. Charters, M. J.: Toothbrush stimulation, *Dental survey* 11:88, (Sept.) 1935.
7. Stillman, P. R.: Philosophy of treatment of periodontal disease, *D. Digest* 38:314, 1932.
8. Stillman, P. R. and McCall, J. O.: *Clinical Periodontia*, New York. The Macmillan Co. 1922.
9. Stillman, P. R.: The toothbrush, *J. Am. Dent. Hygienists Assn.* 7:3, 1933.
10. Hirschfeld, I.: The toothbrush, its use and abuse, New York. *Dent. Items Interest Pub. Co.* 1939.
11. Bass, C. C.: The optimum characteristics of toothbrushes for personal oral hygiene, *Dent. Items Int.* 70: 697, 1948.
12. Paine, S. and Hercus, C. E.: The nutritional status of Cook Islanders, *J. Nutrition* 5:327, 1951.
13. Cunningham, W. M.: Prevalence of periodontal disease 2. In Australia, *Internat. D. J.* 5:200, 1955.
14. Davies, G. N.: Dental conditions among the Polynesians of Pukapuka (Danger Island) ii. The prevalence of periodontal disease, *J. D. Res.* 35:734, 1956.
15. Clement, A. J., Plotkin, R. and Fosdick, L. S.: The formation of lactic acid in dental plaques. ii. Oral conditions of primitive bushmen of the western Kalahari Desert, *J. D. Res.* 35:486, 1956.
16. Supplement 1a with March 1956 number of *J.A.D.A.*
17. Bass, C. C.: The necessary personal oral hygiene for prevention of caries and periodontoclasia, *New Orleans M. & S. J.*, 101:52, 1948.
18. Bass, C. C.: An effective method of personal oral

- hygiene, J. Louisiana State M. Soc., 106:57; 106:100, 1954.
19. Bass, C. C.: The optimum characteristics of dental floss for personal oral hygiene, *Dent. Items Int.* 70:921, 1948.
 20. Bass, C. C. and Fullmer, H. M.: The location of the zone of disintegrating epithelial attachment cuticle in relation to the cemento-enamel junction and to the outer border of the periodontal fibers on some tooth specimens, *J. D. Res.* 27:623, 1948.
 21. Kronfeld, R.: *Histopathology of the teeth and their surrounding structures*, 3rd ed. revised and edited by Boyle, P. E. Philadelphia. Lea and Febiger, 1950.
 22. Bass, C. C.: A demonstrable line on extracted teeth indicating the location of the outer border of the epithelial attachment, *J. D. Res.* 25:401, 1946.
 23. Bass, C. C.: The relation of the inner border of bacterial film on the tooth within the gingival crevice, to the zone of disintegrating epithelial attachment cuticle, *Oral Surg., Oral Med. and Oral Path.* 2:1580, 1949.
 24. Bass, C. C.: The relation of the inner border of subgingival calculus to the zone of disintegrating epithelial attachment cuticle, *Oral Surg., Oral Med. and Oral Path.* 3:1125, 1950.
 25. Bass, C. C.: The optimum characteristics of dental floss for personal oral hygiene, *Dent. Items Int.* 70:921, 1948.
 26. Stephan, R. M.: Hydrogen ion concentration of the dental plaque, *J. D. Res.* 17:251, 1938.
 27. Stephan, R. M.: Changes in hydrogen-ion concentration on tooth surfaces and in carious lesions, *J.A.D.A.* 27:718, 1940.
 28. Fosdick, L. S., Campaigne, E. E. and Foucher, O.: Rate of acid formation in dental caries: The etiology of dental caries, *Ill. D. J.*, 10:85, 1941.
 29. Fosdick, L. S. and Burrill, D. Y.: The effect of pure sugar solutions on the hydrogen-ion concentration of carious lesions, *Fortnightly Review, Chicago Dent. Soc.*, 6:7, 1943.
 30. Stephan, R. M.: Intra-oral hydrogen-ion concentration associated with dental caries activity, *J. D. Res.* 23:257, 1944.
 31. Eastlick, K. A.: *Dental Caries*, St. Louis, C. V. Mosby Co., 1948.
 32. *Dental Caries: prevention and control* (Pamphlet) Chicago, A.D.A.
 33. Fosdick, L. S.: The reduction of the incidence of dental caries, 1. Immediate tooth-brushing with a neutral dentifrice, *J.A.D.A.* 40:133, 1950.
 34. McKay, F. S.: Mottled enamel: a fundamental problem in dentistry, *Dent. Cosmos* 67:847, 1925.
 35. Black, G. V. and McKay, F. S.: Mottled teeth: An endemic developmental imperfection heretofore unknown in the literature of dentistry, *Dental Cosmos* 58:129, 1916.
 36. McKay, F. S.: The establishment of a definite relation between enamel that is defective in its structure, as mottled enamel, and the liability to decay, *Dental Cosmos* 71:729, 1929.
 37. McKay, F. S.: Progress of the year in the investigation of mottled enamel with special reference to its association with artesian water, *J. Natnl. Dent. Assoc.*, 5:721, 1918.
 38. McKay, F. S.: The present status of the investigation of the cause, and of the geographical distribution of mottled enamel including a complete bibliography on mottled enamel, *J. Dent. Res.* 10:561, 1930.
 39. Churchill, H. V.: Occurrence of fluorides in some waters of the United States, *J. Ind. and Eng. Chem.* 23: 996, 1931 and *J. Am. Water Works Assoc.* 23:1399, 1931.
 40. Dean, H. T. and Elvove, E.: Studies on the minimum threshold of the dental sign of chronic endemic fluorosis (mottled enamel), *P. H. Rep.* 50:1719, 1935.
 41. See reference 60.
 42. Ast, D. B., Finn, S. B., and Chase, H. C.: Newburgh-Kingston caries fluorine study iii. Further analysis of dental findings including the permanent and deciduous dentitions after four years of water fluoridation, *J.A.D.A.* 42:188, 1951.
 43. Cox, G. J.: Recent progress in prevention of dental caries by the fluoridization of community water supplies, *Penn. Dent. J.*, 17:279, 1950.
 44. Hill, I. N., Blaney, J. R. and Wolf, W.: The Evanston dental caries study. vii. The effect of artificially fluoridated water on dental caries experience of 12, 13, and 14 year old school children, *J. D. Res.* 30:670, 1951.
 45. *Ibid.* The Evanston dental caries study. x. The caries rates of 6, 7 and 8 year old children with progressively increasing periods of exposure to artificially fluoridated water, *J. D. Res.* 31:346, 1952.
 46. McKay, F. S.: Mass control of dental caries through the use of domestic water supplies containing fluorine, *Am. J. Pub. Health*, 38:828, 1948.
 47. Brown, H. K.: Mass control of dental caries by fluoridation of public water supply, *J. Canada D. Assoc.*, 18:200, 1952.
 48. Ast, D. B. and Chase, H. C.: The Newburgh-Kingston caries fluorine study. iv. Dental findings after six years of water fluoridation, *Oral Surg., Oral Med. and Oral Path.* 6:114, 1953.
 49. Deatherage, C. F.: Fluoride domestic waters and dental caries experience in 2,026 white Illinois Selective Service men, *J. D. Res.*, 22:129, 1943.
 50. Arnold, F. A., Jr.: The possibility of reducing dental caries by increasing fluoride ingestion. *Dental caries and fluorine*, *Am. Assn. Adv. Science*, 1946.
 51. Knutson, J. W.: An evaluation of the Grand Rapids water fluoridation project, *J. Mich. State Med. Soc.* 53: 1001, 1954.
 52. Bull, F. A.: Control of dental caries by the addition of fluorides to public water supplies, *J.A.D.A.* 41:146, 1950.
 53. Arnold, F. J., Jr., Dean, H. T., Jay, P., Knutson, J. W.: Effect of fluoridated public water supplies on dental caries prevalence, *P. H. Rep.* 71:652, 1956.
 54. Brown, H. K., McLaren, H. R., Josie, G. H. and Stewart, B. J.: The Brantford-Sarnia-Stratford fluoridation caries study—1950 report, *J. Can. D. A.* 22:207, 1955.
 55. Leone, N. C., and others: Review of the Bartlett-Cameron Survey: a ten year fluoride study, *J.A.D.A.* 50: 277, 1955.
 56. Ast, D. B., Smith, D. J., Wachs, B., Cantwell, K. T.: Newburgh-Kingston caries-fluorine study xiv. Combined clinical and roentgenographic dental findings after ten years of fluoride experience, *J.A.D.A.* 52:314, 1956.
 57. Forscher, B. K., Paulsen, A. G. and Hess, W. C.: The pH of the periodontal pocket and the glycogen content of the adjacent tissue, *J. D. Res.* 33:444, 1954.
 58. Dean, H. T., and others: Domestic water and dental caries, including certain epidemiological aspects of oral *L. acidophilus*, *P. H. Repts.* 54:862, 1939.
 59. Dean, H. T., Jay, P., Arnold, F. A., Jr., and Elvove, E.: Domestic water and dental caries. ii. A study of 2,832 white children, aged 12-14 years, of 8 suburban Chicago communities, including *L. acidophilus* studies of 1,761 children, *P. H. Repts.* 56:761, 1941.
 60. Dean, H. T., Arnold, F. A., Jr. and Elvove, E.: Domestic water and dental caries experience in 4,425 white children, aged 12 to 14, of 13 cities in 4 states, *P. H. Rept.* 57:1155, 1942.
 61. Arnold, F. A., Jr.: Role of fluorides in preventive dentistry, *J.A.D.A.* 30:499, 1943.
 62. Dean, H. T.: Epidemiological studies in the United States. Dental caries and fluorine, *Am. Assn. Adv. Science*, 1946.
 63. Russell, A. L.: The inhibition of approximal caries in adults with lifelong fluorine exposure, *J. D. Res.* 32: 138, 1953.
 64. Ast, D. B., Bushel, A., Wachs, B. and Chase, H. C.: Newburgh-Kingston caries-fluorine study, viii. Combined clinical and roentgenographic dental findings after eight years of fluoride experience, *J.A.D.A.* 50:680, 1955.
 65. Arnold, F. A., Jr., Dean, H. T. and Singleton, D. E.:

The effect on caries incidence of a single topical application of a fluoride solution to the teeth of young adult males of a military population, *J. D. Res.* 23:155, 1944.

66. Bibby, B. G.: The use of fluorine in the prevention of caries. ii. Effect of sodium fluoride application, *J.A.D.A.* 31:317, 1944.

67. Cheyne, V. D.: Human dental caries and topically applied fluorine: a preliminary report, *J.A.D.A.* 29:804, 1942.

68. Knutson, J. W. and Armstrong, W. C.: The effect of topically applied sodium fluoride on dental caries experience, *P. R. Repts.*, 58:1701, 1943.

69. Knutson, J. W. and Armstrong, W. D.: The effect of topically applied sodium fluoride on dental caries experience. ii. Report of findings for second study year, *P. H. Repts.* 60:1085, 1945.

70. Bibby, B. G.: Use of fluorine in the prevention of dental caries. i. Rationale and approach. *J.A.D.A.* 31:228, 1944.

71. Rickels, N. H. and Becks, H.: The effects of an acid neutral solution of sodium fluoride on the incidence of dental caries in young adults, *J. D. Res.* 30:757, 1951.

72. Rickels, N. H.: The effects of a neutral and an acid solution of NaF on the incidence of dental caries in young adults, *J. D. Res.* 30:519, 1951.

73. Klinkengerg, E. and Bibby, B. G.: The effect of topical applications of fluorides on dental caries in young adults, *J. D. Res.* 29:4, 1950.

74. Gallagan, D. J. and Knutson, J. W.: Effect of topically applied fluoride on dental caries experience. vi. Experiments with sodium fluoride . . . widely spaced applications . . . Use of solution concentrations, *P. H. Rep.* 63:1215, 1948.

75. Knutson, J. W. and Armstrong, W. D.: The effect of topically applied sodium fluoride on dental caries experience. iii. Report of findings for the third study year, *P. H. Rep.* 61:1683, 1946.

76. Knutson, J. W.: An evaluation of the effectiveness as a caries control measure of the topical application of solutions of fluorides, *J. D. Res.* 27:340, 1948.

77. Kutler, B. and Ireland, R. L.: The effect of sodium fluoride applications on the dental caries experience in adults, *J. D. Res.* 32:458, 1953.

78. Miller, J.: Bi-annual treatment with silver nitrate, copper cement, or 1 per cent sodium fluoride in the prevention of dental caries, *J. D. Res.* 33:735, 1954.

79. Carter, W. J., Jay, P., Shklar, I. L. and Daniel, L. H.: The effect of topical fluoride on dental caries experience in adult females of a military population, *J. D. Res.* 34:73, 1955.

80. Marshall-Day, C. D.: Effect of topical sodium fluoride on dental caries during adolescence, *J. D. Res.* 30:514, 1951.

81. Jordan, W. A., Wood, O. B., Allison, J. A. and Irwin, V. D.: The effects of various numbers of topical applications of sodium fluoride, *J.A.D.A.* 33:1385, 1946.

82. Knutson, J. W., Armstrong, W. D. and Feldman, F. M.: The effect of topically applied sodium fluoride on dental caries experience. iv. Report of findings with two, four, and six applications, *P. H. Rep.* 62:425, 1947.

83. Bibby, B. G. and Turesky, S. S.: A note on the duration of caries inhibition produced by fluoride applications, *J. D. Res.* 26:105, 1947.

84. Syrrist, A. and Karlsen, K.: A 5 year report on the effect of topical applications of sodium fluoride on dental caries experience, *Brit. D. J.* 97:1, 1954.

85. McCauley, H. B. and Dale, P. P.: Observations of increased caries activity following interruption of topical fluorine applications, *J. D. Res.* 24:305, 1945.

86. Howell, C. L., Gish, C. W., Smiley, R. D. and Muhler, J. C.: Effect of topically applied stannous fluoride in dental caries experience in children, *J.A.D.A.* 50:14, 1955.

87. Muhler, J. C., Radike, A. W., Niebergall, W. H. and Day, H. G.: A comparison between the anticariogenic effects of dentifrices containing stannous fluoride and sodium

fluoride, *J.A.D.A.* 51:556, 1955.

88. Muhler, J. C.: Effect of fluorides and other solutions on solubility of powdered enamel in acid, *Proc. Soc. Exp. Biol. and Med.* 92:849, 1956.

89. Lillenthal, B.: Inhibition of acid formation from carbohydrate by stannous fluoride and stannous chlorofluoride, *Aust. Dent. J.* 1:165, 1956.

90. Lillenthal, B.: The effect of a stannous fluoride mouthwash on formation in the mouth and some observations on the mechanism of inhibition, *Aust. Dent. J.* 1:221, 1956.

91. Lillenthal, B. and Martin, N. D.: Investigations of the anti-enzymatic action of fluoride at the enamel surface, *J. D. Res.* 35:189, 1956.

92. Adler, P., Straub, J. and Popovics, M.: Intravital uptake of fluorides by the teeth under various conditions, *J. D. Res.* 29:549, 1950.

93. Knutson, J. W.: Evolution of the use of fluorine as a caries control measure: The effect of topically applied fluorine, *J.A.D.A.* 38:204, 1949.

94. Bibby, B. G. and Brudevold, F.: The external action of fluorides and other agents on the teeth in the prevention of dental decay. In fluoridation as a public health measure, Shaw, J. H., editor. Washington, D. C., Am. Assn. Adv. Science, 1954.

95. Forsyth, B. D.: Oral health activities of the U. S. Public Health Service, *J.A.D.A.* 39:158, 1949.

96. Knutson, J. W.: The nationwide topical fluoride demonstration program, *J.A.D.A.* 39:438, 1949.

97. News of Dentistry, *J.A.D.A.* 41:486, 1950.

98. Dean, H. T.: Fluorine in the control of dental caries, *J.A.D.A.* 52:1, 1956.

99. Fluoride means less tooth decay, Leaflet. A.D.A. Chicago.

100. Lull, G. F.: Fluoridation of water supplies. Editorial, *Today's Health* 32:13, 1955.

101. News of Dentistry, *J.A.D.A.* 50:235, 1956.

102. News of Dentistry. Launch campaign to spur fluoridation, *J.A.D.A.* 53:106, 1956.

103. News of Dentistry, 28,543,799 drink fluoridated water; all Chicago covered, *J.A.D.A.* 53:492, 1956.

104. Bibby, B. G.: The apparent antagonism between caries and periodontal disease, *J. Periodont.* 24:42, 1953.

105. Massler, M. and Ludwick, W.: Relation of dental caries experience and gingivitis to geographic location and size of community in males 17 to 21 years old. (At the Great Lakes Naval Training Center), *J. D. Res.* 31:313, 1952.

106. Massler, M. and Savara, B. S.: Relation of gingivitis to dental caries and malocclusion, *J. D. Res.* 29:695, 1950.

107. Massler, M. and Schour, I.: The P-M-A index of gingivitis, *J. D. Res.* 28:634, 1949.

108. Massler, M., Cohen, A. and Schour, I.: Epidemiology of gingivitis in children, *J.A.D.A.* 45:319, 1952.

109. Massler, M. and Ludwick, W.: Relation of dental caries experience and gingivitis to geographic location and size of community in males 17 to 21 years old. (At the Great Lakes Naval Training Center), *J. D. Res.* 31:313, 1952.

110. Massler, M., Ludwick, W. and Schour, I.: Dental caries in males 17 to 20 years old. (At the Great Lakes Naval Training Center), *J. D. Res.* 31:195, 1952.

111. Massler, M. and Savara, B. S.: Relation of gingivitis to dental caries and malocclusion in children 14 to 17 years of age, *J. Periodont.* 22:87, 1951.

112. Sandler, H. C.: Testing the uniformity of the P-M-A index as a measurement of periodontal disease, *J. D. Res.* 31:323, 1952.

113. Brown, H. K., Kohl, F. A., MacDonald, J. B. and McLaren, H. R.: Measurement of gingivitis among school-age children in Brantford, Sarnia and Stratford, using the P-M-A index, *Canadian J.P.H.* 45:112, 1954.

114. Klein, H. and Palmer, C. E.: On the epidemiology of dental caries, Philadelphia, U. of Pa. Press, 1941.

115. Klein, H. and Palmer, C. E.: Studies on dental

- caries. xii. Comparison of caries susceptibility of the various morphological types of permanent teeth, *J. D. Res.* 20:203, 1941.
116. Klein, H., Palmer, C. E., Knutson, J. W.: Dental status and dental needs of elementary school children, *P. H. Rep.* 53:751, 1938.
117. Dunning, J. M.: Variability in dental caries experience and its implication upon sample size, *J. D. Res.* 29:541, 1950.
118. Russell, A. L. and Elvove, E.: Domestic water and dental caries. vii. A study of the fluoride caries relationship in an adult population, *P. H. Repts.* 66:1389, 1951.
119. Greenwood, D. A.: Fluoride intoxication, *Physiological Reviews* 20:582, 1940.
120. Roholm, K.: Fluorine Intoxication, London, H. K. Lewis and Co., 1937.
121. Shortt, H. E., Pandit, C. G. and Raghavachari, T. N. S.: Endemic fluorosis in the Nellore district of South India, *Ind. Med. Gaz.* 72: 396, 1937.
122. Shortt, H. E., McRobert, G. R., Barnard, T. W. and Nayer, A. S. M.: Endemic fluorosis in Madras Presidency, *Ind. J. Med. Res.* 25:553, 1937.
123. Pandit, C. G., Raghavachari, T. N. S., Rao, D. S. and Krishnurnti, V.: Endemic fluorosis in South India. A study of the factors involved in the production of mottled enamel in children and severe bone manifestations in adults, *Ind. J. Med. Res.* 28:533, 1940.
124. Pandit, C. G. and Rao, D. N.: Endemic fluorosis in South India. Experimental production of chronic fluorine intoxication in monkeys (*Macaca radiata*), *Ind. J. Med. Res.* 28:559, 1940.
125. Liusman, J. F. and McMurray, C. A.: Fluoride osteosclerosis from drinking water, *Radiology* 40:474, 1943. Also erratum p. 497.
126. Kilborn, L. G., Outerbridge, T. S. and Lei, H. P.: Fluorosis with report of advanced case, *J. Canad. M. A.* 62:135, 1950.
127. Hodges, P. C., Fareed, O. J., Ruggy, G. and Chudnoff, J. S.: Skeletal sclerosis in chronic sodium fluoride poisoning, *J.A.M.A.* 117:1938, 1941.
128. Leone, N. C., and others: Medical aspects of excessive fluoride in water supply., *P. H. Rep.* 61:925, 1954.
129. Bishop, P. A.: Bone changes in chronic fluorine intoxication; roentgenographic study, *Am. Roentgenol.* 35: 577, 1936.
130. Bauer, J. T., Bishop, P. A. and Wolff, W. A.: Pathologic changes of bone in chronic fluorine poisoning, *Bull. Ayer Clin. Lab., Pennsylvania Hospital*, 3:67, 1937.
131. Badger, D. C.: Toxic level of fluorine in water supplies, *Am. J. Dis. Children* 78:72, 1949.
132. Speder, E.: Abstract in *Am. J. Roentgenology* 38:506, 1937.
133. Wilkie, J.: Two cases of fluorine intoxication, *Brit. J. Radiol.* 13:213, 1940.
134. Wolff, W. A. and Kerr, E. G.: Composition of human bone in chronic fluoride poisoning, *Am. J. M. Sci.* 195:493, 1938.
135. Glock, G. E., Lowater, E. and Murray, M. M.: The retention and elimination of fluorine in bones, *Biochem. J.* 35:1235, 1941.
136. Kemp, F. H., Murray, H. M. and Wilson, D. C.: Spondylosis deformans in relation to fluorine and general nutrition, *Lancet* 2:93, 1942.
137. DeEds, F.: Chronic fluorine intoxication, *Medicine* 12:1, 1933.
138. Fleming-Moller, P. and Gudjonsson, Sk. V.: Massive fluorosis of bones and ligaments, *Acta. radiol.* 13:267, 1932.
139. Dale, P. P. and McCauley, H. B.: Dental conditions in workers chronically exposed to dilute and anhydrous hydrofluoric acid, *J.A.D.A.* 37:131, 1948.

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OFFICERS OF THE LOUISIANA STATE MEDICAL SOCIETY FOR THE COMING YEAR

The House of Delegates, acting for the Louisiana State Medical Society, has again discharged its duties most creditably and chosen officers for the State Society for the coming year, who are a credit to the organization and worthy of the dignity and responsibility of the profession.

Dr. H. Ashton Thomas becomes President after a period of many years in which he has rendered valuable services to the

cause of organized medicine. He has been active in the affairs of the Orleans Parish Medical Society, has served as its President, and has been Councilor from the First District of Louisiana and President of the Council for many years. He brings to the office a wealth of experience and practical knowledge which result from such endeavors. It is a source of satisfaction to the membership that the leader of our organization in the year to come has the qualities which will ensure its stability and further progress.

The President elect, to take office a year hence, is Dr. Arthur Long of Baton Rouge. Dr. Long has earned the admiration and respect of his colleagues generally over the State from his efforts as a leader in the East Baton Rouge Medical Society, his work as Councilor from the Sixth District, and from his valued assistance to the Society during the time that our insurance difficulties were the source of acute concern.

Dr. Paul D. Abramson becomes immediate Past President, and as he relinquishes the affairs of office to Dr. Thomas, Dr. Abramson has with him the gratitude and appreciation of the entire membership for his many activities in our behalf during the year just concluded and many previous years. Dr. Abramson is to be congratulated upon his successful endeavors in many matters of importance, and particularly, for his strenuous efforts in fighting the Chiropractic Bill.

Dr. H. H. Hardy of Alexandria continues as a Vice President, in which capacity and as a leader of the Rapides Parish Medical Society he has earned esteem and confidence of the whole Society. His work with the matter of the medical aspects of the Louisiana Department of Public Welfare has brought credit to him and to the Society, and he will continue to be a valuable member of the Executive Committee.

Other Vice Presidents are Dr. C. J. Brown and Dr. J. O. Weilbaeher, both of New Orleans. Dr. Brown and Dr. Weilbaeher have been President of the Or-

leans Parish Medical Society, have worked in the interests of the Society as chairmen of committees, and in many areas where activities of organized medicine meet those of the public. Dr. Brown has been chairman of the State Congressional Committee for some years, and Dr. Weilbaeher has recently been general Chairman of Arrangements for the highly successful meeting of the State Society in New Orleans during the past month.

Dr. C. Grenes Cole was re-elected by acclamation for another term as Secretary-Treasurer. The Society is most fortunate to have services over a successive period of years from Dr. Cole, whose experience and judgment have been of incalculable aid to our organization in times of stress and crisis. Dr. Cole is one of the few in our Society whose efforts have continued over many years in its behalf and who has contributed to making Louisiana by comparison what amounts to a medical paradise so far as the practice of medicine is concerned. It is a source of great satisfaction that his stable influence will continue.

The membership of the Council is changed slightly by the addition of Dr. Felix Planche, who will represent the First Congressional District, and Dr. Jack

Bevin, who will represent the Sixth. Dr. Planche has served the Orleans Parish Medical Society long and well, as an officer, committee member, as a member of the Charity Hospital Board of Administrators, and will be a stable adviser in the affairs of the Council. Dr. Jack Bevin of Baton Rouge has served the East Baton Rouge Medical Society in many capacities, and brings to the Council a wealth of experience gained in this active organization.

The Chairman and Vice Chairman of the House of Delegates, Dr. W. Robyn Hardy of New Orleans, and Dr. O. B. Owens of Alexandria, continue in their respective positions. To these gentlemen the Society as a whole and the House of Delegates in particular owe a debt of gratitude for a job well performed in the years past, and our fellow members acknowledge cheerfully that without such direction and decision the affairs of the House would languish, and what is accomplished in two days might otherwise bear heavily on the time and patience of the membership.

The Executive Committee thus constituted is a stable and experienced group. The Society is to be congratulated on the selection of each member.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

HOUSE OF DELEGATES

MAY 6-8, 1957

Minutes

Minutes of 1956 meeting of House of Delegates approved as recorded.

Minutes of meetings of Executive Committee since 1956 meeting of House of Delegates approved as recorded.

Special Order

Introduction of new members of the House of Delegates.

Recognition of guests and fraternal delegates.

Roll of members who died since 1956 meeting read.

Talk by Mr. R. E. LeCorgne, attorney representing State Society and Louisiana State Board of Medical Examiners.

Greetings from Woman's Auxiliary, AMA, SMA and LSMS. Report of Auxiliary of LSMS accepted.

Acceptance with thanks of communication and check for \$10,000.00 from the Continental Service Life & Health Insurance Company.

Expression of appreciation to Dr. Matas in re: Publication of "History of Medicine in Louisiana."

Reports without Recommendations

Following reports accepted as printed:—Secretary-Treasurer, Chairman of Council, Councilors: First District, Second District, Third District,

Fourth District, Fifth District, Sixth District, Seventh District, Eighth District; Committees: Accreditation of Hospitals, Advisory to Selective Service, Aid to Indigent Members, Alcoholism, Blood Banks, Budget and Finance, Child Health, Chronic Diseases, Committees, Congressional Matters, Diabetes, Domicile, Gamma Globulin and Salk Vaccine, Geriatrics, History of Medicine in Louisiana, Hospitals, Industrial Health, Lectures for Colored Physicians, Liaison with Louisiana State Nurses' Association, Louisiana Organizations for State Legislation, Maternal Welfare, Mediation, Medical and Hospital Service in re Insurance Contracts, Medical Defense, Medical Education, Medical Indigency, Medical Testimony, National Emergency Medical Service, Neuropsychiatric Service at Charity Hospital, Public Health of the State of Louisiana, Scientific Work, State Hospital Policies, Woman's Auxiliary.

Supplemental Report of *Committee on Gamma Globulin and Salk Vaccine*, without recommendations, accepted.

Supplemental Report of *Committee on History of Medicine in Louisiana* in which the Chairman stated copies of both volumes are available through J. A. Majors Co., accepted.

Reports with Recommendations

President: Referred to Committee on President's Report and report of this Committee approving following recommendations adopted: 1. Constant surveillance and evaluation of the Medicare Program. 2. Renewed and invigorated efforts of public and professional education regarding the evils of chiropractic. 3. Increased leadership in planning and disseminating, to the medical profession and allied fields, a knowledge for management of casualties in major disaster. 4. Efforts to further the sale of Matas' "History of the State Medical Society" to all of the members.

Past Presidents' Advisory Council: Four resolutions (printed under "resolutions"): 1. TV and Radio advertising: Approved. 2. Opposition to hospital insurance blanks: Approved. 3. Medical Practice Act: Approved. 4. Medical Case Histories: Referred to Council on Medical Service and Public Relations.

Committee on American Medical Education Foundation: 1. Additional efforts be made to obtain contributions to AMEF from members of the Society; initial appeal to be made by mail during July or August and that two or three follow-up appeals be made later in the year to members of the Society who have not yet contributed: Approved. 2. Sufficient funds be made available in order to carry out this type of mail campaign: Approved. 3. Officers and Councilors of the State Society and officers of component societies set a good example by contributing early to AMEF: Approved.

Committee on Arrangements: 1. Section 1 of Chapter XI of the By-Laws be amended to state

... "1.75 per capita be set aside as an annual entertainment fund." Withdrawn.

Committee on Cancer: 1. The State Society sanction and give its support to the further development of tumor registries in hospitals throughout Louisiana: Approved. 2. Members of the State Society be urged, through editorials or other communication in the Journal of the Louisiana State Medical Society, to make fuller use of exfoliative cytologic facilities presently available in the state: Approved. 3. Members of the State Society be urged to be alert for instances of cancer quackery in Louisiana and that they report to the Cancer Commission any information which they can obtain in this regard: Approved. 4. Amount of \$500.00 be budgeted for use, if necessary, by the Cancer Commission in carrying out its various functions during the forthcoming year: Approved.

Committee on Federal Medical Services: 1. Members of the State Society be urged to cooperate in the successful operation of Medicare: Approved. 2. House of Delegates repeat endorsement of the AMA long-range position in regard to VA medical care being limited to service-connected illnesses: Approved. 3. Copies of "The Trojan Horse" by Louis M. Orr, be placed in the hands of every member of the Society for distribution to friends and patients: Approved.

Committee on Journal: 1. Amend Section 4 of Chapter IX of the By-Laws to state "... The State Society shall pay The Journal one dollar and a half (\$1.50) per year per member in consideration of which each member shall receive the Journal for one (1) year ...": Approved. 2. Dr. C. M. Horton be continued as a member of the Committee on Journal: Approved.

Committee on Mental Health: 1. The Committee on Mental Health be made a standing committee of the Louisiana State Medical Society: Rejected. 2. The Committee on Mental Health be recognized by the State Society as the body for liaison with the Governor and State Department of Hospitals concerning matters of mental health: Rejected. 3. Recommendation be made to appropriate authorities that a fully qualified physician be secured to administer the state mental health program: Rejected.

Committee on Public Policy and Legislation: 1. State Society urge component societies to cooperate with Louisiana State Board of Medical Examiners in bringing all illegal practitioners of medicine to the immediate attention of District Attorneys in areas where they are practicing; if component societies will not cooperate, State Board urged to take necessary steps to have these individuals enjoined from practicing medicine: Approved. 2. Committee on Public Policy and Legislation remain active and secure active participation of component societies in continuing good relations with Legislators: Approved. 3. Public Relations campaign instituted: Approved. Sup-

plemental Report approved. Report of Legislative Consultant accepted. Special thanks expressed to Legislative Consultant for work done in behalf of State Society.

Committee on Resolutions: 1. It is recommended that a copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society: Approved.

Committee on Rural and Urban Health: 1. Greater interest in rural health by all doctors in the state: Approved. 2. The sum of \$1000.00 be appropriated for activities of the Committee on Rural and Urban Health: \$800.00 approved by Budget and Finance Committee. Supplemental Report by Chairman accepted and discussed; suggested publication in re insecticides.

Council on Medical Service and Public Relations: Report accepted. Supplemental report by Public Relations counselor accepted after discussion. Special thanks expressed to Public Relations counselors for work done in behalf of State Society.

Resolutions

Change in Commitment Law: Referred to Committee on Public Policy and Legislation. "BE IT RESOLVED that the House of Delegates approves of a revision in the mental health act with reference to commitment procedures which would allow for a non-judicial commitment, yet would preserve the immunity of the Coroner in carrying out any administrative acts attached to the functions of his office as required by the revision of this law. The House of Delegates authorizes the Committee on Public Policy and Legislation to work with the New Orleans Society of Neurology and Psychiatry in writing this bill and if approved by the Committee, that it will be submitted for consideration at the State Legislative Session of 1958."

Television and Radio Advertising: Approved. "WHEREAS, the Television and Radio are repeatedly expounding the cause of patent medicine firms and their products over the TV and Radio Stations, and recommending these respective drugs to the public as cure-alls, thereby creating false claims and hopes for the general public and,

"WHEREAS, these misrepresentations cause an irreparable harm to the general population in their misguided usage of such drugs recommended and,

"WHEREAS, each individual is unto himself a distinct and separate problem, subject to susceptibilities and idiosyncrasies, oftentimes making these drugs contra-indicated,

"THEREFORE BE IT RESOLVED that the House of Delegates recommend that our Delegates to the AMA House of Delegates exert every effort to have the AMA House of Delegates give this matter serious consideration and obtain some relief from such dangerous advertising.

"BE IT FURTHER RESOLVED that a copy of this resolution be sent to all other State Societies, requesting their support in passing such a resolution, thereby securing some relief from such harmful practices."

Opposition in re Hospital Blanks: Approved. "WHEREAS, the Louisiana State Medical Society has adopted and approved simplified uniform claim forms insurance blanks, submitted to us by the Special Committee on Prepayment Insurance under the Council on Medical Service of the American Medical Association, and

"WHEREAS, the Louisiana Hospital Association, with the cooperation of the Blue Cross upon its own initiative at their recent convention and without consultation with or knowledge of the medical profession, and in spite of opposition of the commercial insurance companies, created and adopted hospital insurance forms marked HAP-4 or C-652 and IHF-1, and

"WHEREAS, these forms not only ignore the physicians completely, but wholly ignore the fact that the insurance laws of the State of Louisiana set out that claims are to be submitted on forms furnished by the respective company by whom the policy was issued. Nowhere on these forms is there a place for the physician to sign, nor is there a place on said blanks where an assignment of benefits can be made to the physician, and

"WHEREAS, it would, in all cases, cause a delay in the submission of claims for the doctor, and

"WHEREAS, the Louisiana Hospital Association, in cooperation with the Blue Cross, has made this final decision attempting to regulate the physicians as well as all of the insurance companies operating within the State of Louisiana without even consulting the insurance companies or physicians in any respect, and

"WHEREAS, without a statement from the physician giving the diagnosis, details of the treatment and other pertinent information, would most assuredly jeopardize the doctor's interest, and in the final analysis, would segregate the doctors completely from any connection with the patient being hospitalized and would prevent the patient from assigning benefits to the physician, at the same time and on the same form, the assignment is made to the hospital. Especially does this work a hardship on our doctors in the Medicare Program where the Continental Service Life and Health Insurance Company is the fiscal administrator for the doctors, as well as for all hospitals, and

"WHEREAS, the Louisiana Hospital Association has taken an arbitrary position in this matter, with no consideration for other insurance companies, the doctors and patients,

"THEREFORE, BE IT RESOLVED that the House of Delegates go on record as opposing the action of the Louisiana Hospital Association in

the use of these forms, which only protect the hospitals and not the doctor.

"BE IT FURTHER RESOLVED that a copy of this resolution be sent to the Louisiana Hospital Association, requesting that they discontinue the use of these forms which are detrimental to the best interest of the physicians.

"BE IT FURTHER RESOLVED, that the Hospitals have no authority to give out information to the patient, family, or the public regarding diagnosis or treatment of a patient without the consent of the doctor, which is being done on the hospital forms just adopted by the Louisiana Hospital Association.

"BE IT FURTHER RESOLVED that this matter be referred to our Hospital Committee for investigation, and it is requested that a report of their findings be submitted to the Executive Committee at their next meeting to be held on May 25."

Medical Practice Act: Approved. "WHEREAS, there have been attempts thru legislation to lower the standards of medical education requirements for licensure to practice medicine and surgery in the State of Louisiana by allowing graduates of foreign medical schools to qualify, and

"WHEREAS, it is a well known fact that foreign medical schools are not of the high standards of American and Canadian medical schools, and

"WHEREAS, such legislation would tend to lower the high standards of medical practice that now exist in this State, and

"WHEREAS, the citizens of this State are entitled to the best medical care, and

"WHEREAS, the medical profession desires this high standard of medical care to continue, and

"WHEREAS, there are now over 3300 licensed physicians in the State, satisfactorily sufficient to attend the medical needs of the people of this State, and

"WHEREAS, the present Medical Practice Act provides for the graduate medical training of graduates of foreign medical schools in educational programs, sponsored by the two medical schools of the State and approved by the State Board of Medical Examiners, so

"BE IT RESOLVED, that this body go on record as being opposed to any changes in the Medical Practice Act of this State regarding graduates of foreign medical schools."

Case Histories: Referred to the Council on Medical Service and Public Relations. "ON MOTION of Dr. Max Mayo Green, and on his suggestion that complete medical records characterize the good physician and hospital and that the keeping of good medical records is in the best interest of the patient and also to the best interest of both the physician and hospital, as such records are essential for the benefit of the patient, as

well as for statistical and teaching purposes and provide the bulwark of defense whenever a claim for negligence or malpractice is made against the attending physician or hospital; and on further suggestion that it is notorious that physicians in the State of Louisiana have been extremely lax in the keeping of full, complete and good records both in their offices and in the hospitals,

"BE IT RESOLVED that the subject matter of this motion and resolution be called to the attention of the House of Delegates of the Louisiana State Medical Society at the forthcoming annual meeting.

"In particular, attention should be directed to the fact that complete, full and good records should include the medical history, a detailed report of the physical examination, including the diagnosis, copies of all laboratory reports, all instructions and treatment given the patient, a progress report, and any special reports, such as that of a consultant, etc. Especially should be included any failure or refusal of the patient to follow instructions.

"If the patient is hospitalized, the medical record should consist of history, the physical examination, copies of reports of last examination and these should justify a diagnosis or at least a working diagnosis. If a diagnosis cannot be made at this time, it should be so stated on the chart, and generally in such circumstances, consultation should be had. The consultants' findings and recommendations, signed by him, should be attached to the hospital chart. These entries, united with the physician's order sheet and progress sheet, form the foundation of a good record. Indicated consent and other special forms should be attached. The progress sheet should include the patient's complaints and the physician's objective findings at the time the entry is made. It is important that a progress note be made at time of discharge and this note should be sufficiently comprehensive to describe fully the patient's condition at that time.

"It is important that every nurse in attendance upon a patient be required to note on the chart of a patient, the patient's complaints and her own observation during each tour of duty on the case, and the doctor should see that this is complied with.

"All orders should be signed by the attending physician and orders given over the telephone signed at the next visit to the hospital. The hours as well as the date should be entered on every order placed on the hospital chart, which should also be done with respect to every visit of the attending physician to see the patient.

"If the case is an emergency, the surgeon should be required to sign a statement, to be attached to the record, to the effect that he is aware of the fact that there is no blood count, urinalysis, history or other records in the record, and that he is proceeding with surgery only for the reason

that the case is an emergency and not to proceed might endanger life."

H.R. 9 and H.R. 10—Jenkins-Keogh Bill: Referred to membership and approved at General Session. "WHEREAS, House Resolution 9 and 10 (Jenkins-Keogh) is to encourage the establishment of voluntary pension plans by the self-employed, and

"WHEREAS, this would be accomplished by affording such individuals a tax deferment on a limited portion of their income set aside for their retirement, and

"WHEREAS, under existing law such a tax deferment is afforded to employed persons whose employers have established a so-called employee pension plan, meeting certain statutory requirements, and

"WHEREAS, since self-employed individuals cannot be their own employers they cannot qualify under existing legislation:

"NOW, THEREFORE, BE IT RESOLVED, that the Louisiana State Medical Society in convention strongly urges the passage of this bill, and

"BE IT FURTHER RESOLVED, that the Congressmen, representing the various Congressional Districts of Louisiana, do all in their power to help pass this bill, and

"BE IT FURTHER RESOLVED, that a copy of this resolution be forwarded to each Louisiana Congressman."

AMENDMENTS APPROVED

Constitution

Article IX, Section 2. (Associate Members). Delete "when endorsed by two active members in good standing" and insert "when approved by the Executive Committee in re physicians in government service.

By-Laws

Chapter II, Section 3. (Installation Meeting). Delete "left to the discretion of the Chairman of the Committee on Arrangements" and insert "left to the discretion of the President and Secretary-Treasurer". Delete "At this meeting the reports of the retiring president and the address of the incoming president, and the annual oration may be rendered".

Chapter II, Section 3. (Scientific Meetings). Delete "No address or paper before the Society, except those of the President and orators, shall occupy more than fifteen minutes in its delivery; and no member shall offer discussion longer than five minutes, nor more than once on any subject."

Chapter III. (Installation of President). Delete "Left to the discretion of the Chairman of the Committee on Arrangements" and insert "left to the discretion of the President and the Secretary-Treasurer."

Chapter X, Section 5. Medical Defense. Add

"Copy of complaint filed" to data to be furnished by doctor.

Chapter IX, Section 4. "The State Society shall pay the Journal one dollar and fifty cents (\$1.50) per year per member in consideration of which each member shall receive the Journal for one (1) year. . . ."

Chapter IX, Section 11. Committee on Committees. The Committee on Committees shall consist of three members to be elected by the House of Delegates for a term of one year. The duties of this Committee shall be to make recommendation concerning appointment of new special committees or discontinuance of special committees and to specify duties of such committees, pending approval of Executive Committee or House of Delegates and to review and consider all other matters referred to it.

Chapter XI, Section 2. Delete. "Component societies having a classification of Intern Membership shall pay dues to the State Society for each member in the amount of one dollar (\$1.00) per annum."

Election of Officers, Delegates and Alternates to AMA and Committees

President-elect — Dr. Arthur D. Long, Baton Rouge

First Vice-President — Dr. C. J. Brown, New Orleans

Second Vice-President — Dr. H. H. Hardy, Jr., Alexandria

Third Vice-President — Dr. J. O. Weilbaecher, Jr., New Orleans

Secretary-Treasurer—Dr. C. Grenes Cole, New Orleans

Chairman of House of Delegates—Dr. W. Robyn Hardy, New Orleans

Vice-Chairman of House of Delegates—Dr. O. B. Owens, Alexandria

Councilor, First District — Dr. Felix Planche, New Orleans

Councilor, Third District — Dr. Guy R. Jones, Lockport

Councilor, Sixth District—Dr. J. L. Beven, Baton Rouge

Councilor, Seventh District—Dr. J. Y. Garber, Lake Charles

Councilor, Eighth District—Dr. R. E. C. Miller, Alexandria

Delegate to AMA (1958 and 1959)—Dr. J. Q. Graves, Monroe

Alternate to Delegate to AMA (1958 and 1959)—Dr. A. A. Herold, Shreveport

Committee on Public Policy and Legislation— Dr. Joseph A. Sabatier, Jr., Baton Rouge, Chairman; Dr. E. L. Zander, New Orleans; Dr. J. E. Clayton, Norco; Dr. Leo Kerne, Thibodaux; Dr. C. E. Boyd, Shreveport; Dr. Henson S. Coon, Monroe; Dr. H. W. Richmond, Oakdale; Dr. F. P. Bordelon, Marksville.

Committee on Committees—Dr. E. L. Leckert, New Orleans, Chairman; Dr. J. Kelly Stone, New Orleans; Dr. Wm. E. Barker, Jr., Plaquemine.

Committee on Journal—Dr. C. M. Horton, Franklin.

Committee on Medical Defense—Dr. C. B. Erickson, Shreveport, Chairman.

Committee on Scientific Work—Dr. M. D. Hargrove, Shreveport; Dr. Sam Hobson, New Orleans.

Future Annual Meetings

Dates and places:—1958-Shreveport, May 5, 6, 7, approved; 1959-New Orleans, May 4, 5, 6; 1960-Baton Rouge or Gulf Coast; 1961-New Orleans; 1962-invitation accepted to hold meeting in Alexandria.

COMMITTEE ON MEDICAL DEFENSE

It is a pleasure to report that the past year was one of relative inactivity for this Committee. There were only three requests for assistance in defense of an instituted suit, the lowest in years.

Two cases instituted last year were settled by compromise before coming to trial. All other cases not specifically covered above are still pending.

C. B. ERICKSON, M. D., Chairman

REPORT OF COMMITTEE ON RESOLUTIONS

The members and guests who have participated in the 1957 Annual Meeting held in New Orleans, May 6-8, are deeply appreciative of the interesting, instructive, and enjoyable activities furnished, and feel that special thanks should be extended the following individuals and groups who have made this possible; therefore, BE IT RESOLVED that the Louisiana State Medical Society express appreciation for assistance by the following:

Dr. George H. Hauser, President, and Dr. J. O. Weilbaecher, Jr., Chairman, and personnel of Committee on Arrangements, and all members of the Orleans Parish Medical Society, hosts to the meeting.

Rev. Vincent D. Smith who offered the invocation at the official opening meeting of the Society.

Mr. Glenn P. Clasen, President of the New Orleans City Council, for his cordial welcome to the city.

Dr. Dwight H. Murray, President of the American Medical Association, for the annual oration presented at the opening meeting and also for his informative address before the House of Delegates.

Dr. J. P. Culpepper, President of the Southern Medical Association, for his talk before the House of Delegates.

Fraternal Delegates, Dr. G. S. Daly and Dr. W. B. Norman for greetings from the Mississippi and Texas State Medical Associations.

Dr. Charles L. Brown for welcome on behalf

of the New Orleans Graduate Medical Assembly.

The following out-of-state guests who participated in the Scientific Program:

Dr. N. Frederick Hicken, Salt Lake City, Utah
Dr. Henry D. Lederer, Cincinnati, Ohio
Dr. Frank B. McGlone, Denver, Colorado
Dr. Harry Schwachman, Boston, Massachusetts
Dr. George V. Taplin, Los Angeles, California
Dr. Philip Thorek, Chicago, Illinois
Dr. Harry M. Weber, Rochester, Minnesota

The New Orleans Chamber of Commerce for cooperation in connection with many phases of the meeting, and particularly for typewriters for use at the Registration Desk.

The Times-Picayune, New Orleans States and New Orleans Item and other newspapers throughout the State for publicity prior to and during the time of the meeting.

Radio and TV stations throughout the state, and particularly WDSU-TV for excellent cooperation in broadcasting specific phases of the meeting.

The Hotel Roosevelt, Headquarters for the meeting, for excellent services rendered members attending the meeting, as well as facilities for various sessions in connection with the meeting; also other hotels and motels in New Orleans for accommodations furnished.

Mr. Paul J. Perret and Mr. Paul R. Kalman, Jr., who have rendered a most valuable service prior to and during the meeting as Public Relations Counselors and have cooperated with Dr. Rafael C. Sanchez, Publicity Chairman, in securing publicity for the meeting; also for report presented to House of Delegates.

Mr. Percy J. Landry, Jr., Legislative Consultant, who has continued to be most helpful to the medical profession for his informative talk before the House of Delegates.

Special thanks to the Continental Service Life and Health Insurance Company of Baton Rouge for communication with enclosed contribution of \$10,000.00 check.

Smith, Kline & French Laboratories for excellent five-state telecast presented during the meeting.

Scientific exhibitors whose exhibits add much interest to the meeting.

Pharmaceutical, surgical and other companies for their continued cooperation in having technical exhibits.

All companies which purchased space for advertising in the Program.

The Metairie Country Club for facilities furnished for the golf tournament.

Dr. Edwin H. Lawson, Secretary of the Louisiana State Board of Medical Examiners, for his report submitted to House of Delegates.

Officers and members of the Woman's Auxiliary who prepared an interesting program for members of the auxiliary.

Dr. Paul D. Abramson, who has served so capably during the past year as President of this organization.

Dr. W. Robyn Hardy, very capable and efficient Chairman of the House of Delegates.

Dr. C. Grenes Cole, Secretary-Treasurer who has continued to render invaluable counsel and service to the organization.

Miss A. M. Shoemaker, our highly competent Assistant Secretary-Treasurer, and the entire secretarial staff for their efficient handling of the

details prior to and during the time of the meeting.

Recommendation

It is recommended that a copy of these resolutions be sent to each person and organization mentioned and also published in The Journal of the Louisiana State Medical Society.

R. E. GILLASPIE, M. D., Member

RALPH H. RIGGS, M. D., Member

J. E. CLAYTON, M. D., Chairman

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

EDUCATORS TO DISCUSS DOCTOR TRAINING

Urgent questions in the training of young doctors now and in the future, and in helping practicing physicians keep up to date was discussed by medical educators in Chicago Feb. 9-11.

The 53rd annual Congress on Medical Education and Licensure was sponsored by the American Medical Association's Council on Medical Education, with the cooperation of the Advisory Board for Medical Specialties and the Federation of State Medical Boards of the United States.

Because there has been much concern over the training of doctors for general practice, the Sunday session concentrated on current education and on ideas about just what can be accomplished during four years of undergraduate medical school.

Dr. Edward L. Turner, secretary of the council, said the emphasis was on the immediate problem—1957 and the future—rather than discussion of what has been done so far.

INJECTIONS USED TO TREAT LOW BACK PAIN

Much low back pain, sciatica and referred pain in the lower extremities can now be elimi-

nated by a very simple treatment: injections of vegetable oil and an anesthetic.

Dr. George S. Hackett, Canton, Ohio, developed the treatment and has used it for the last 14 years. He said in the Jan. 19 Journal of the American Medical Association that 82 per cent of 1,178 patients treated with the injections "consider themselves cured."

Dr. Hackett's injection treatment causes new cells to be produced in bone and fiber tissue at joints where the pain originates. It is based on his belief that relaxation of the ligaments which "weld" these joints is the cause of more low back pain and referred pain than any other factor.

When a ligament is relaxed, normal tension or movement stretches the fibers. This overstimulates the sensory nerves because they do not stretch. Thus pain is produced either at the site (called "trigger-point pain") or in some other part of the body (referred pain).

POTENT COUGH SUPPRESSANT

The potent cough suppressant formerly known as narcotine, has been given a new generic name which removes the connotation that the antitussive is a dangerous narcotic. The new term approved by the American Medical Association is "noscapine". The change also has the

blessings of H. J. Anslinger, Commissioner of the U. S. Bureau of Narcotics, and Nathan B. Eddy, Secretary of The Committee on Drug Addiction, National Research Council of the Institute of Health.

HEARING AID MODIFIED FOR USE IN SURGERY

The transistor hearing aid has assumed a new, and sometimes lifesaving, task: monitoring the breathing of an unconscious surgical patient.

A Baltimore dentist and a physician described in the Jan. 26 Journal of the American Medical Association how they adapted the hearing aid to its new use. They call their apparatus the Breathophone.

It consists of a hearing-aid transistor amplifier, a hearing-aid earphone that does not have to be worn in the ear, and a microphone that is removed from the hearing aid and placed within the anesthesia breathing apparatus.

Sylvan M. Shane, D.D.S., and Dr. Harry Ashman of the department of anesthesiology, Lutheran Hospital of Maryland, said that amplifying the breathing sounds is the most accurate way of checking an unconscious patient's respiration. If breath sounds are not audible, the only other way of checking is to watch the slight rise and fall of a rubber breathing bag.

PHYSICIAN CALLS "CULT OF MANLINESS" SUICIDAL

The medical director of a large industrial firm recently blamed the "suicidal cult of manliness" for the "rat race" in which many American men find themselves.

Writing in the American Medical Association's January Today's Health, Dr. Lemuel C. McGee, Wilmington, Del., said the average lifetime of men is about four years less than that of women, mainly because of the stress under which men live.

The use of a "little common sense" could eliminate many of the tensions and stresses, providing a healthier and longer life for most people, he said.

"The American male has been indoctrinated with the philosophy that he must live, work and play at a dizzy pace, that he can and should wade through all emotional and physical situations without flinching and without reflection," Dr. McGee said.

Every man and boy must live within his own resources of physical and mental strength, but many fail to do so because of the cult of manliness. They drive themselves to the point of exhaustion in work, play, social activities or a combination of these. This could be avoided by reasonable attention to the use of spare time

and intelligent effort at recreation, he said.

PINE-SOL RECOMMENDED FOR HOSPITAL AND HOME USE

General Practitioners, who are often asked to recommend an excellent cleaner, disinfectant and deodorizer for all-purpose use on hospital walls, floors, in sick rooms, and for washing baby garments and baby equipment, may be interested to learn about Pine-Sol—an effective new product that successfully incorporates these three important ingredients.

Made by the Milner Products Company of Jackson, Mississippi, Pine-Sol is composed of 78 per cent pine oil, soap isopropyl alcohol, water and optical bleach. It has a phenol coefficient of five which allows Pine-Sol to be five times as effective as pure phenol for killing B. Typhosus germs.

Recent studies of pine oil disinfectants, which have long been discussed by such agencies as the U. S. Department of Agriculture and the U. S. Public Health Service in various publications, have proven that pine oil disinfectants, such as Pine-Sol, effectively combat gram negative organisms typified by typhoid and coliform.

AID FOR MEDICAL STUDENTS

Twenty-four Americans prominent in the fields of medicine, education, and industry have been named as Honorary Trustees of The Foundation of the Student American Medical Association, according to Russell F. Staudacher, Chicago, Foundation Secretary.

Founded in 1955 as an irrevocable trust to give financial aid to growing numbers of medical students in their last three years of training, Foundation officials hope that the availability of funds for loans will also encourage qualified individuals to enter medical training.

The initial appeal for support of the goals of the Foundation is being directed to all medical organizations, individual physicians, pharmaceutical manufacturers, and scores of philanthropic Foundations with an evidenced interest in medical education.

PROFESSIONAL NURSING SCHOOL ADMISSIONS DECLINE IN 1956

The number of new students entering schools of professional nursing dropped last year, while admissions to schools of practical nursing remained steady, it was announced today by John H. Hayes, chairman, Committee on Careers, National League for Nursing, New York.

Schools of professional nursing in the United States and territories last year enrolled 45,839 new students, as against 46,498 the previous year. This was the first year since 1952 that admissions to these schools declined and thus

failed to keep pace with the steady growth of the college age population. During this period professional nursing schools annually have attracted about 4% of the girls in this population age group and were expected to enroll 46,700 new students last year.

RESEARCH ON CEREBRAL VASCULAR DISEASE

The launching of the first, nationwide cooperative research attack against cerebral vascular disease was announced recently by Surgeon General Leroy E. Burney of the Public Health Service.

This disease, commonly known as "stroke," is the Nation's third-ranking killer.

Ten medical research centers in 9 states have already joined in the program, and it is expected that 35 to 40 institutions will ultimately participate, Dr. Burney said.

The program, which is expected to run 5 or six years, is under the auspices of the National Institute of Neurological Diseases and Blindness of the Public Health Service's National Institutes of Health.

Dr. Pearce Btiley, Institute Director, said it has been estimated that as many as* 1,800,000 living Americans have suffered cerebral (brain) strokes at one time or another. Deaths due to such strokes are estimated at 175,000 annually.

NATION'S FAMILY DOCTORS SUPPORT BELEAGUERED BRITISH COLLEAGUES

American family doctors have lined up solidly behind their colleagues across the sea. British physicians, caught between spiraling costs and the Ministry of Health's refusal to grant a promised salary increase, are currently threatening to resign from the National Health Service.

Pointing out that the British medical care plan has failed miserably and put medicine on a mass production basis, the American Academy of General Practice recently urged British family doctors and specialists to resign from the NHS. The statement, issued at the Kansas City headquarters, came from Dr. Floyd C. Bratt, Rochester, N. Y., chairman of the Academy's Commission on Public Policy.

In 1951, the NHS arbitrarily decided that all family doctors should earn the equivalent of \$6,200 a year. Since then, the cost of labor has risen 35 per cent and the doctors want a more modest 24 per cent increase. They have been offered a token 5 per cent.

Reports that British physicians are planning to strike are misleading, Dr. Bratt pointed out. The doctors do not plan to strike. Instead, they simply plan to resign from the NHS. This would mean a return to fee-for-service care. Instead of billing the government, doctors would bill each patient.

Dr. Bratt added that British physicians would not have been caught in the socialized medicine trap if they had built a strong medical care system based on general practice.

SCHERING RELEASES ARTHRITIS FILM

A new 16 mm. color motion picture on the uses of steroids in the treatment of rheumatoid arthritis has been released for showing to professional groups by the research division of Schering Corporation.

The film reviews the chemistry, physiology, and clinical application of the new "Meti" steroid hormones in rheumatoid arthritis and other collagen diseases. It presents the most commonly accepted theories of adrenal corticosteroid therapy and reflects the current knowledge of the subject.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

The Woman's Auxiliary to the Orleans Parish Medical Society entertained at the Orleans Club at 2:30 Wednesday afternoon, May 8th with a Tea and style show of glamorous summer frocks and swim togs from Maison Blanche.

Mrs. Boni J. DeLaurel, the newly installed president of the Woman's Auxiliary to the Louisiana State Medical Society, was guest of honor. Other guests were members of the Woman's Auxiliary of the State Society.

Mrs. Abe Golden, President of the Woman's Auxiliary to the Orleans Parish Medical Society introduced and welcomed the distinguished guests: Mrs. Robert Flanders, Fair Hills, Mass., President, Woman's Auxiliary to the American

Medical Association; Mrs. Thomas E. Strain of Shreveport, La. representing President, Woman's Auxiliary to the Southern Medical Association; Mrs. Boni J. DeLaurel, President, Woman's Auxiliary to the Louisiana State Medical Society; Mrs. W. A. K. Seale, immediate past President, Woman's Auxiliary to the Louisiana State Medical Society; Mrs. Eugene H. Countiss, incoming President, Woman's Auxiliary Orleans Parish Medical Society; Mrs. Albert Habeeb, President Elect, Orleans Parish Auxiliary; Mrs. Ashton Thomas, wife of Dr. Thomas, President of Louisiana State Medical Society; Mrs. George H. Hauser, wife of Dr. Hauser, President of Orleans Parish Medical Society and Mrs. J. O. Weil-

baecher, Jr.

City Councilman James Fitzmorris, Jr. welcomed the guests to the City of New Orleans and presented keys to the City to Mrs. Flanders, Mrs. Strain, Mrs. Seale and a scroll of merit to Mrs. Abe Golden for a job well done.

Mrs. Jules Myron Davidson, a past president of the Woman's Auxiliary to the Louisiana State Medical Society, presided at the installation of the new officers of the Woman's Auxiliary to the Orleans Parish Medical Society. The following officers were installed:—Mrs. Eugene H. Countiss, President; Mrs. Albert Habeeb, President-Elect; Mrs. Robert C. Kelleher, 1st Vice President; Mrs. John J. Archinard, 2nd Vice President; Mrs. William C. Rivenbark, 3rd Vice President; Mrs. George H. Hauser, 4th Vice President; Mrs. William J. Rein, Recording Secretary; Mrs. Philip P. LaBruyere, Jr., Treasurer; Mrs. C. Barrett Kennedy, Corresponding Secretary; Mrs. Monte Meyer, Parliamentarian. Mrs. Abe Golden Ex-Officio.

Mrs. Countiss gave a few remarks of acceptance and read the names of the members of her Board:—

Archives, Mrs. Rufus W. Alldredge.

Budget, Mrs. Philip P. LaBruyere, Jr.

Samples and Clothes Collection, Mrs. David Bradley.

Commemoration, Mrs. Frank S. Oser, Jr.

Contact, Mrs. Boni J. DeLaureal.

Convention—Grad. Medical Assembly, Mrs. Albert F. Habeeb.

Courtesy, Mrs. Charles B. Odom.

Doctor's Day, Mrs. George F. Sustendal.

Essay Contest, Mrs. Nicholas Chetta.

Health Chairman, Mrs. Robert C. Kelleher.

Historian, Mrs. John J. Archinard.

Hostesses, Mrs. Fred O. Brumfield.

Legislation, Mrs. Abe Golden.

Membership, Mrs. Daniel W. Beacham.

Mental Health, Mrs. Martin O. Miller.

Notifications, Mrs. George Feldner.

Nurse Recruitment, Mrs. Spencer B. McNair.

Periodic Health, Mrs. Ralph J. McDonough.

Printing Supplies, Mrs. William C. Rivenbark.

Program, Mrs. Charles Farris, Jr.

Publications, Mrs. Robin Hardy.

Publicity, Mrs. Branch J. Aymond.

Public Relations, Mrs. Edwin A. Socola.

Registration, Mrs. Carl N. Wahl.

Telephone, Mrs. L. Sidney Charbonnet, Jr.

At the tea which followed the Fashion Show alternating in presiding at the tea and coffee service were: Mmes. Monte F. Meyer, J. S. Hebert, Daniel N. Silverman, S. M. Blackshear, Wiley R. Buffington, Frederick L. Fenno, Adolph Jacobs, George Taquino, J. W. Warren, and C. Grenes Cole.

The tea girls were: Misses Judith Kelleher, Margaret Countiss, Linda Thomas, Ann Miller, Mary Carroll Guidry, Judith Miller, Lucille Vella, Kathleen Brown, Elsa Golden, Margaret Ohms, Joan Treadway, Susanne Hunt, Elizabeth Ann Bellone and Ann Schlosser.

The following were Chairmen: Mrs. Jules Myron Davidson of the Tea; Mrs. William W. Kohlmann and Mrs. Joseph A. Vella of Tea girls; Mrs. Martin O. Miller of the Fashion Show; Mrs. Esmond Fatter of flower arrangements for tea tables; Mrs. Edwin R. Guidry as Chairman of the State Convention of Woman's Auxiliary to the Louisiana State Medical Society performed a magnificent job.

Mrs. Branch J. Aymond,
Publicity Chairman.

BOOK REVIEWS

Polio Pioneers, The Story of the Fight Against Polio; by Dorothy and Philip Sterling; with photographs by Myron Ehrenberg and the National Foundation for Infantile Paralysis, Garden City, N. Y., Doubleday & Co., 1955. Illus. 129 p. Price \$2.75.

This is a popular presentation of all the things that had to be discovered about disease and vaccination and viruses before the Salk vaccine could be achieved. The book is profusely illustrated and the explanations are clearly given in language understandable to the layman.

Dorothy Sterling is experienced in popular science writing since she was for some years on the staff of *Life* and has written a number of books for children. Her husband, Philip Sterling is with the Publicity Department of C.B.S. Radio.

The photographs are unusually fine and add much to the interest which the book offers.

MARY LOUISE MARSHALL

A Modern Pilgrim's Progress for Diabetics; by Garfield G. Duncan, M.D., Philadelphia, Pa., W. B. Saunders Co., 1956, Pp. 222, Price \$2.50.

Most recent of the manuals for diabetic patients is this small volume by Dr. Duncan, Clinical Professor of Medicine and Director of the Medical Divisions of the Pennsylvania Hospital and the Benjamin Franklin Clinic. In diabetes, more than in many other diseases the patient shares responsibility in the conduct of treatment with the physician. In an interesting manner a composite picture of the diabetic life and of diabetes, is given in story form as the life of a

diabetic. An appendix gives much detailed information as to self-care and a glossary defines many medical terms, unfamiliar to lay persons.

MARY LOUISE MARSHALL

Campbell's Operative Orthopaedics; edited by J. S. Speed, M. D. and Robert A. Knight, M. D., 3rd Edition. St. Louis; The C. V. Mosby Company, 1956, 2 vols. 2124 pp. Price \$40.00.

The Third Edition of this monumental work first published by Willis Campbell in 1939 is most welcome. The Second Edition revised under the authorship of Dr. Campbell's associates, J. Spencer Speed and Hugh Smith which appeared in 1949, firmly established this work as the authoritative compilation of operative procedures in orthopedic surgery. This latest revision now under the editorship of J. Spencer Speed and Robert Knight records the progress and changes that have occurred in orthopedic surgery during the past seven years. The editors have called for assistance on all members on the staff of the Campbell Clinic as well as on other outstanding authorities in the country in this most thorough revision.

The addition of the chapter on surgical physiology by James Hardy is timely and the extensive revision on the use of intramedullary fixation reflects the extensive work which has been carried out by this group in this particular field. Not only has the Third Edition increased some 510 pages but the inclusion of a number of new illustrations greatly enhances the value of many of the sections.

The revision has been so extensive and the material increased so greatly it seems impossible that this amount of change and progress could have occurred in such a brief period of time. It illustrates the expanding scope of orthopedics and also indicates the importance of this book to every surgeon who deals with lesions of the bones and joints.

JACK WICKSTROM, M. D.

Hypnotic Suggestion, Its Role in Psychoneurotic and Psychosomatic Disorders; by S. J. Van Pelt, New York: Philosophical Library, 1956, Pp. 87, Price \$2.75.

The author is a British medical hypnotist, and the book was published at the peak of the Bridey Murphy publicity. Its eighty-seven small pages attempt to provide to the physician treating psychoneurotic and psychosomatic disorders not only historical statistics, actual mental mechanisms involved and technique, but also a course in the practical application of hypnosis. Such omniscience in a small volume is equaled only by the

relative omnipotence Dr. Van Pelt ascribes to hypnosis in the treatment of psychoneurotic and psychosomatic disorders.

The twelve case histories are dramatically presented. Dr. Van Pelt's basic assumption is that, because by suggestion one can produce in a hypnotized individual similar symptoms to those that appear in a psychoneurotic, one can conclude that the psychoneuroses are the result of accidental self-hypnosis and suggestion. He places great emphasis on the eliciting during hypnosis of the thought that first frightened the patient. Then in a few sessions the hypnotherapist is supposed to give constructive suggestions regarding the frightening thought.

The book does have some merit, but this merit lies primarily in its being read by the physician who is broadly acquainted with literature in the field. The danger of the volume lies in encouraging injudicious use of hypnosis which can be not only ineffective but actually harmful to the emotionally ill individual.

GENE L. USDIN, M. D.

PUBLICATIONS RECEIVED

Grune & Stratton, N. Y.: *Experimental Psychopathology*, edited by Paul H. Hoch, M. D., and Joseph Zubin, Ph.D.; *Synopsis of Gastroenterology*, by Rudolph Schindler, M. D.; *Blood and Bone Marrow Patterns*, by G. D. Talbott, M. D.

Harvard University Press, Cambridge: *Medical Services for Rural Areas*, by William A. Massie.

Paul B. Hoeber, Inc., N. Y.: *Clinical Electrocardiography, Interpretation on a Physiologic Basis*, by Manuel Gardberg, M. D., with chapters by Richard Ashman, Ph.D., Irving L. Rosen, M. D., and Louis Levy, II, M. D.

The Interstate Publishing Co., Danville, Ill.: *The Riddle of Stuttering*, by C. S. Bluemel, M. D.

Office of the Surgeon General, Department of the Army, Washington: *Orthopedic Surgery in the European Theater of Operations*, edited by Colonel John Boyd Coates, Jr., Mather Cleveland, M. D., and Elizabeth M. McFetridge, M. A.; *General Surgery, Volume II*, edited by Colonel John Boyd Coates, Jr., Michael E. DeBakey, M. D., W. Philip Giddings, M. D., and Elizabeth M. McFetridge, M. A.

W. B. Saunders Co., Phila.: *Principles of Urology*, by Meredith F. Campbell, M. D.

Charles C Thomas, Publisher, Springfield, Ill.: *Manual of Radiation Therapy*, by K. Wilhelm Stenstrom, Ph.D., revised with additions and discussions by Paul C. Olfelt, M. D., and Frances Conklin, M. D.

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Boger, W. P.; Strickland, C. S.; and Gylfe, J. M.: Antibiot. Med. & Clin. Ther. 3:378 (Nov.) 1956.

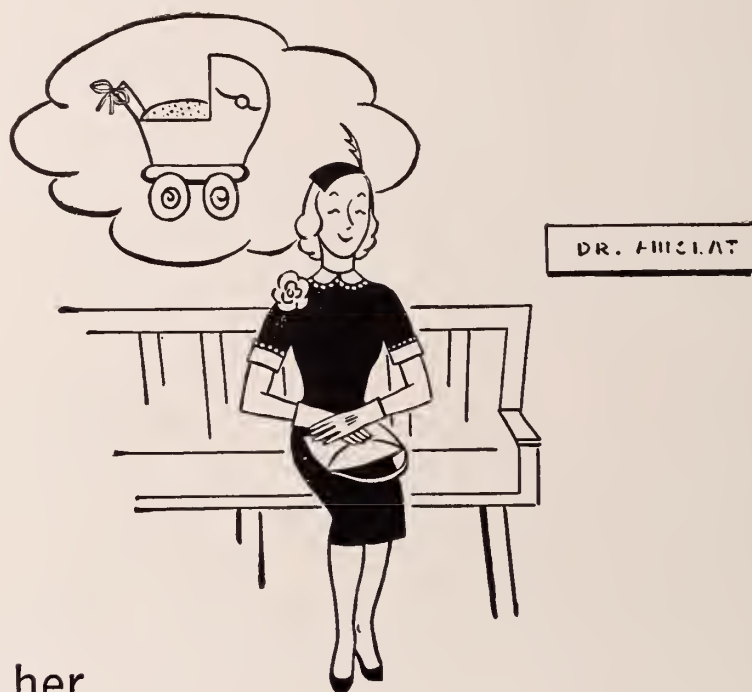

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(1) King, J. W., and Hainline, A., Jr.: Commercial Glucose Oxidase Preparations for the Detection of Glucose in Urine, *Cleveland Clin. Quart.* 23:212, 1956. (2) Leonards, J. R.: Evaluation of Enzyme Tests for Urinary Glucose, *J.A.M.A.* 163:260 (Jan. 26) 1957.

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1. Herrell, W. E., Erythromycin, Antibiotics Monographs, No. 1, p. 34, New York, Medical Encyclopedia Inc., 1955. 2. Eastman, G., Cook, E. and Bunn, P., N. Y. State J. Med., 56:241, 1956. 3. Solomon, S. and Johnston, B., Amer. J. Med. Sc., 230:660, 1955.

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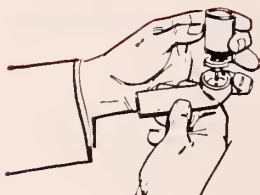
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Medihaler-Epi replaces injected epinephrine in urticaria, edema of glottis, etc. due to acute food, drug or pollen reactions...Each 10 cc. bottle delivers 200 inhalations.

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Medihaler-EPI® Riker brand epinephrine U.S.P. 0.5% solution in inert, nontoxic aerosol vehicle. Each measured dose 0.12 mg. epinephrine. In 10 cc. bottle with measured-dose valve.

Medihaler-ISO® Riker brand isoproterenol HCl 0.25% solution in inert, nontoxic aerosol vehicle. Each measured dose 0.06 mg. isoproterenol. In 10 cc. bottle with measured-dose valve.

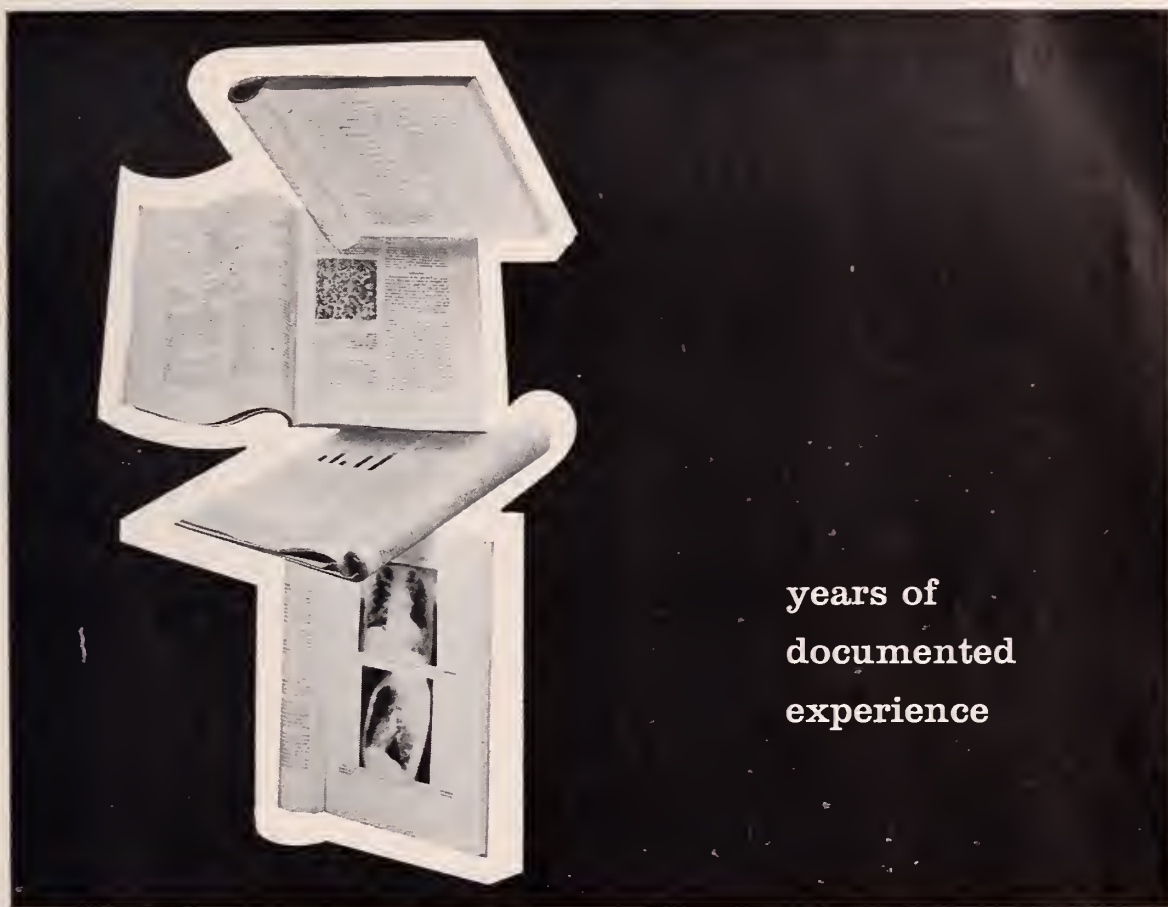
Note: First prescription for Medihaler medications should include the desired medication and Medihaler Oral Adapter (supplied with pocket-sized plastic carrying case for medication and Adapter).

The Medihaler Principle

is also available in Medihaler-Nitro™ (octyl nitrite) for the rapid relief of angina pectoris ...and Medihaler-Phen™ (phenylephrine-hydrocortisone-neomycin) for lasting, effective relief of nasal congestion.

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experience

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BRAND OF CHLORMERODRIN (18.3 MG. OF 3-CHLOROMERCURI-2-METHOXY-PROPYLUREA
EQUIVALENT TO 10 MG. OF NON-IONIC MERCURY IN EACH TABLET)

a standard for initial control of severe failure

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stands for— • greater antibiotic absorption •
// earlier therapeutic blood levels • faster broad-
spectrum action. ACHROMYCIN V Capsules are the new, rapid-
acting, oral form of ACHROMYCIN* Tetracycline—offering
your patients, on the average, twice the antibiotic
absorption in half the time required by older preparations.

mycin V

REMEMBER THE V WHEN SPECIFYING

ACHROMYCIN[®] V Tetracycline Buffered with Phosphate

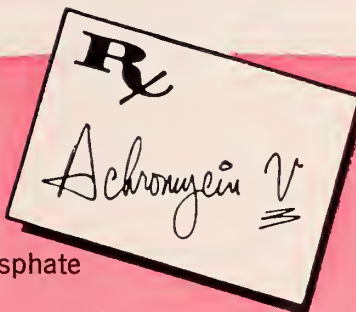
CAPSULES—Each capsule (pink) contains tetracycline equivalent to 250 mg. of tetracycline HCl, phosphate-buffered. Bottles of 16 and 100 capsules.

SYRUP—Each teaspoonful (5 cc.) of orange-flavored syrup contains 125 mg. of tetracycline HCl activity, phosphate-buffered. Bottles of 2 and 16 fl. oz.

ACHROMYCIN V dosage: 6-7 mg. per lb. of body weight per day for children and adults.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, N. Y.

*Reg. U. S. Pat. Off.



Steroid-Nutritional Therapy Is Constructive Approach for the First Signs of Aging

Emphasis on Early Treatment Before "Damage" Is Done

The first subtle suggestions of physiologic deterioration should not be dismissed if serious somatic and metabolic disorders are to be avoided. Prompt institution of steroid-nutritional therapy may forestall and even reverse premature "damage" and help prolong the active life of the patient.

Some of the most common symptoms of declining gonadal function and nutritional insufficiency are vague pains in the bones and joints, easy fatigability, decreased muscular tone, loss of appetite, chronic mental fatigue and general malaise. In older patients, these complaints are frequently indicative of degenerative processes when they cannot be attributed to a specific cause.

The comprehensive formula of "Mediatric" is specifically designed to provide three therapeutic services: 1. *protect* general metabolic integrity; 2. *preserve* physiologic efficiency; 3. *prevent* premature damage.

"Mediatric" supplies estrogen and androgen in small amounts to exert a favorable influence on bone and protein metabolism,¹ restore muscle tone and coordination,² and increase the tensile strength of the skin.³ The two steroids appear to have an additive metabolic effect, while their opposing action on sex-linked tissue minimizes the incidence of untoward reactions.

Dietary supplements, including essential B vitamins and ascorbic acid, ensure adequate nutrition, prevent moderate anemias, and maintain efficient enzyme systems. The mood elevat-

ing effect of a mild antidepressant helps restore emotional stability and increases mental alertness.

Recommended dosages: Male—1 tablet or 1 capsule (or 3 teaspoonfuls) daily, or as required. Female—1 tablet or 1 capsule (or 3 teaspoonfuls) daily, or as required, taken in 21 day courses with a rest period of one week between courses.

Bibliography on request.

"MEDIATRIC"® Tablets and Capsules

Each capsule or tablet contains:

Conjugated estrogens equine ("Premarin"®)	0.25 mg.
Methyltestosterone	2.5 mg.
Vitamin C (ascorbic acid)	50.0 mg.
Thiamine mononitrate (B ₁)	5.0 mg.
Vitamin B ₁₂ with intrinsic factor concentrate	1/6 U.S.P. Unit
Folic acid U.S.P.	0.33 mg.
Ferrous sulfate exsic.	60.0 mg.
Brewers' yeast (specially processed)	200.0 mg.
d-Desoxyephedrine HCl	1.0 mg.
Tablets—No. 752—bottles of 100 and 1,000.	
Capsules—No. 252—bottles of 30, 100, and 1,000.	

"MEDIATRIC" Liquid

Each 15 cc. (3 teaspoonfuls) contains:

Conjugated estrogens equine ("Premarin"®)	0.25 mg.
Methyltestosterone	2.5 mg.
Thiamine HCl (B ₁)	5.0 mg.
Vitamin B ₁₂	1.5 mcg.
Folic acid U.S.P.	0.33 mg.
d-Desoxyephedrine HCl	1.0 mg.

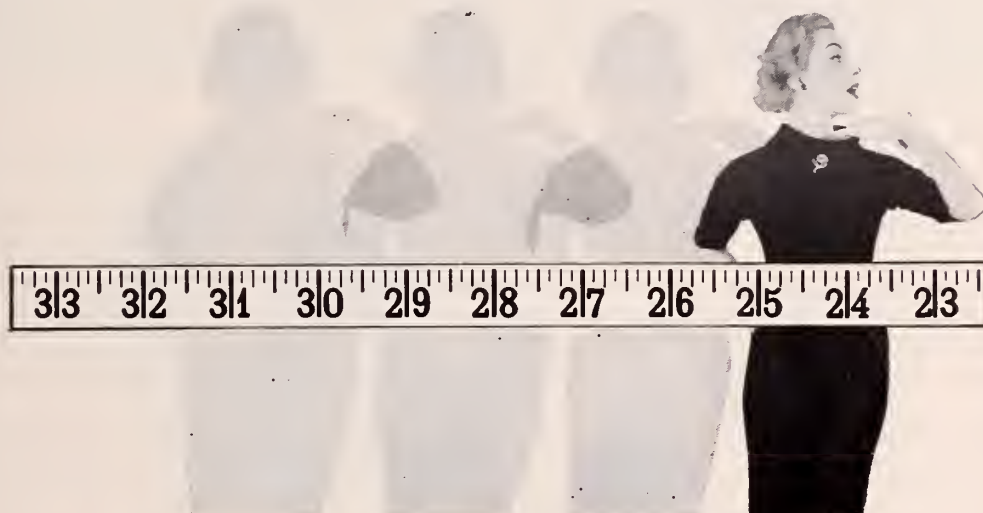
Contains 15% alcohol

No. 910—bottles of 16 fluidounces and 1 gallon.

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(brand of phenmetrazine hydrochloride)

*"...a highly effective and safe appetite suppressant..."*¹

Based on clinical reports, PRELUDIN produces more than twice the weight loss achieved by patients receiving a placebo.² It is singularly free of tendency to produce serious side actions, as well as stimulation.¹⁻³ PRELUDIN imparts a feeling of well-being that encourages the patient to cooperate willingly in treatment.¹⁻³

The reduced incidence of side actions with PRELUDIN makes losing weight more comfortable for the average patient, facilitates treatment of the complicated case and frequently permits its use where other anorexants are not tolerated.³

Recommended Dosage: One tablet two to three times daily one hour before meals. Occasionally smaller dosage suffices. On theoretical grounds, PRELUDIN should not be given to patients with severe hypertension, thyrotoxicosis or acute coronary disease.

(1) Holt, J. O. S., Jr.: Dallas Med. J. 42:497, 1956. (2) Gelvin, E. P.; McGavack, T. H., and Kenigsberg, S.: Am. J. Digest. Dis. 1:155, 1956. (3) Natenshon, A. L.: Am. Pract. & Digest Treat. 7:1456, 1956.

PRELUDIN® (brand of phenmetrazine hydrochloride). Scored, square, pink tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.



THERE'S some mighty shrewd wisdom in what Joe says. But human nature being what it is, far too many of us still seek medical advice from those who aren't qualified to give it.

No matter what's bothering you... constant fatigue, nerves on edge, recurring aches and pains... it is never wise to stay away from your doctor

in the hope that you'll run into somebody who will know "just what's best" for your trouble. In fact, it's often dangerous to accept an amateur's "sure cure."

Seek a friend's advice, if you wish, on almost any other problem. But when it comes to your health, and that of your family, by all means don't let anyone other than a physician advise you.

By seeing your doctor at the first sign of trouble, you will not only avoid the hazards of amateur medical advice, but chances are you will save time and money in the long run. In fact, prompt and proper medical care may well turn out to be one of the biggest bargains ever to come your way.

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You'll remember Joe's words of wisdom about seeking professional medical advice from the doctor rather than from the "amateur." His remark points up the fact that, by consulting *you* at the first sign of trouble, your patients will save time and money in the long run . . . perhaps even their lives.

Like all ads in the colorful P-D series, we believe this latest message will give your patients and prospective patients a better understanding of the importance of *prompt* and *proper* medical care.

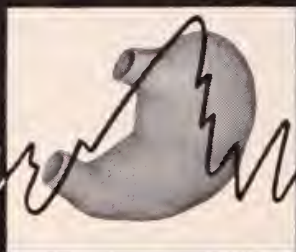
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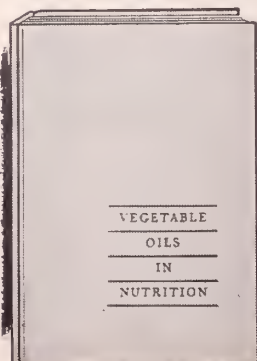
In the dietary management of blood cholesterol levels it is practical to decrease the total daily intake of fat and substitute Mazola Corn Oil for a substantial amount of the saturated fat. Corn oil can be included in the daily diet as salad dressings and in a variety of other ways* without the usual inconveniences of dieting. Mazola Corn Oil is a product everyone knows, respects, enjoys and keeps on hand.



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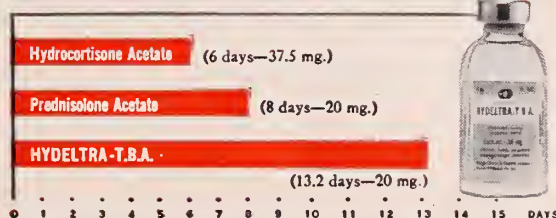
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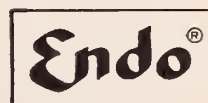
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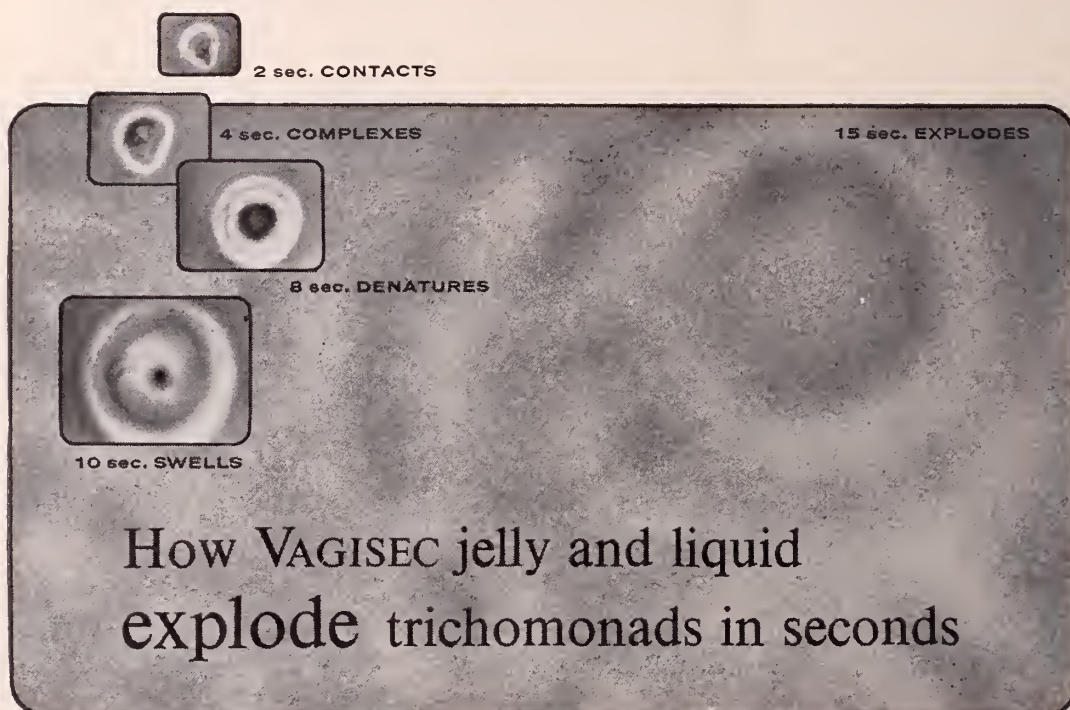
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How VAGISEC jelly and liquid explode trichomonads in seconds

VAGINAL trichomoniasis quickly yields to VAGISEC® liquid and jelly.¹⁻⁵ These unique trichomonocides *explode* flagellates after 15 seconds' contact. Following a VAGISEC douche, VAGISEC jelly maintains trichomonocidal effectiveness 'round-the-clock. With this new approach, therapy succeeds in more than 90 per cent of cases.⁴

Research proves effectiveness—In hundreds of tests with slide preparations, mixtures of VAGISEC jelly and vigorous cultures of *Trichomonas vaginalis* have been examined under a phase-contrast microscope.^{3,6} The trichomonads *explode and disperse within 15 seconds* after contact with jelly—exactly like those in a VAGISEC douche solution.³⁻⁶

Explosion succeeds—VAGISEC liquid and jelly penetrate rapidly to trichomonads covered by vaginal mucus and cellular debris and *explode* them, avoiding post-treatment flare-ups.³⁻⁵ VAGISEC therapy often rids stubborn clinical cases of "trich" even after other agents fail.

Why parasites explode—A wetting agent, a detergent and a chelating agent, combined in balanced blend in VAGISEC liquid and jelly,³⁻⁵ act to weaken the parasites' cell membranes, remove waxes and lipids, and denature the protein. Then the trichomonads imbibe water, swell and explode into fragments . . . all within 15 seconds.

The Davis technique†—Dr. Carl Henry Davis, co-discoverer of VAGISEC, recommends a combination of office treatments with VAGISEC

liquid and 'round-the-clock home therapy with the liquid and jelly.³ This regimen halts vaginal trichomonal infections and ensures *continuous* control until all trichomonads are gone. For a small percentage of women who have an involvement of cervical, vestibular or urethral glands, other treatment will be required.^{1,3-5}

Re-infections can and do occur from the husband^{2-5,7,8}—Prescribing RAMSES®, high quality prophylactics, as protection against conjugal contagion ensures husband cooperation. Most of them know and prefer RAMSES—the one with "built-in" sensitivity. RAMSES are superior, transparent rubber prophylactics, naturally smooth, very thin, yet strong. At all pharmacies.

Active ingredients in VAGISEC liquid: Polyoxyethylene nonyl phenol, Sodium ethylene diamine tetra-acetate, Sodium dioctyl sulfosuccinate. In addition, VAGISEC jelly contains Boric acid, Alcohol 5% by weight.

References: 1. Decker, A., and Decker, W. H.: Practical Office Gynecology, Philadelphia, F. A. Davis Company, 1956. 2. McGoogan, L. S.: J. Michigan M. Soc. 55:682 (June) 1956. 3. Davis, C. H. (Ed.): Gynecology and Obstetrics (revision), Hagerstown, W. F. Prior, 1955, vol. 3, chap. 7, pp. 23-33. 4. Davis, C. H.: West. J. Surg. 63:53 (Feb.) 1955. 5. Davis, C. H.: J.A.M.A. 157:126 (Jan. 8) 1955. 6. Molomut, N., Port Washington, N. Y.: Personal communication (Jan.) 1957. 7. Draper, J. W.: Internat. Rec. Med. 168:563 (Sept.) 1955. 8. Feo, L. G., et al.: J. Urol. 75:711 (Apr.) 1956.

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†Pat. app. for

Paris, too, knows and uses Pentothal...

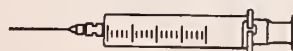


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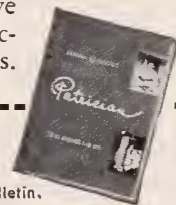
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The Cancer Commission of the Louisiana State Medical Society

Hoxsey Claims Scored By Church Publication

"An Examination of the Claims of the Hoxsey Cancer Clinic"* an article by Francis D. Nichol, Editor of the Review and Herald, general Church paper of the Seventh Day Adventists, is considered a most effective review by the American Cancer Society's Committee on New or Unproved Methods of Cancer Treatment.

The Review and Herald published the Food and Drug Administration's warning concerning the Hoxsey treatment for internal cancer in June, 1956. A large number of protesting letters from subscribers prompted Mr. Nichol's personal study of the claims made by Mr. Hoxsey. His well-documented article includes the investigations made by competent medical authorities, by the National Cancer Institute and the Food and Drug Administration. He states the importance of "Early detection and prompt adequate treatment of cancer", and concludes:

"We have studiously sought to deal with Mr. Hoxsey's alleged evidence, not with his motives. We do not attempt to say whether his heart is good, but only whether his medicine is. We must conclude that it is not good, even though his patients may think it is. Indeed, there lies its greatest danger—it lulls cancer patients into a false sense of security and, meanwhile, time flies. Accordingly, we can do no other than stand by the Food and Drug Administration's warning notice that we published last June."

Mr. Nichol has been commended by professional organizations, the U. S. Department of Health, Education and Welfare, other voluntary agencies and many doctors for his objective and dispassionate document.

* A reprint of "An Examination of the Claims of the Hoxsey Cancer Clinic" may be obtained from the Louisiana Division of the American Cancer Society, 822 Perdido Street, New Orleans 13, La.



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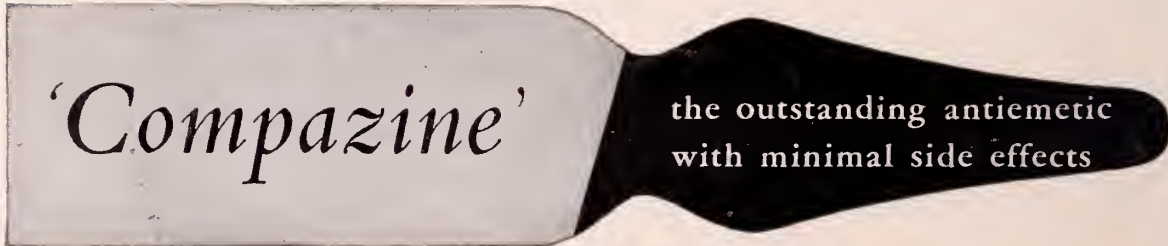
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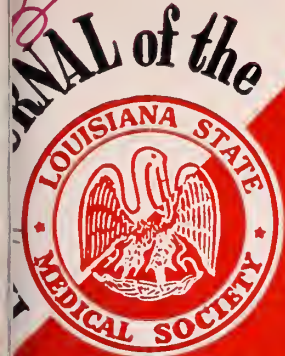


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VIRUS INFLUENZA INFORMATION

The Louisiana State Department of Health has been advised by the International Influenza Center For The Americas that the best information currently available indicates that influenza currently prevalent in the Far East could appear in the Western Hemisphere sometime this Summer or Fall.

The virus responsible for major epidemics in the Far East is a Type A variant remarkably different antigenically from strains previously isolated.

Physicians are requested to report immediately to the Section of Epidemiology, Louisiana State Department of Health, the occurrence of any suspected influenza among their patients, as there is a need for rapid investigation and laboratory diagnosis of any acute respiratory disease resembling influenza. It is imperative that specimens be taken for laboratory examination and personnel of local health units will gladly assist any physician in the collection of such specimens.

As the virus can be isolated from throat washings of patients during the first three days of illness, throat garglings should be obtained in 10 to 15 cc of skimmed milk or distilled water in a paper cup and transferred to a sealed closed tube for transportation to the laboratory as quickly as possible.

Acute and convalescent serum samples should also be submitted for study. The first should be collected during the acute illness and the second two to four weeks later.

When the throat washings are submitted they should be refrigerated or frozen, if possible, and a request made for virus isolation studies. The bloods should be submitted as paired sera and may be sent in the usual way and a request made for serologic study for influenza.



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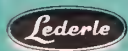
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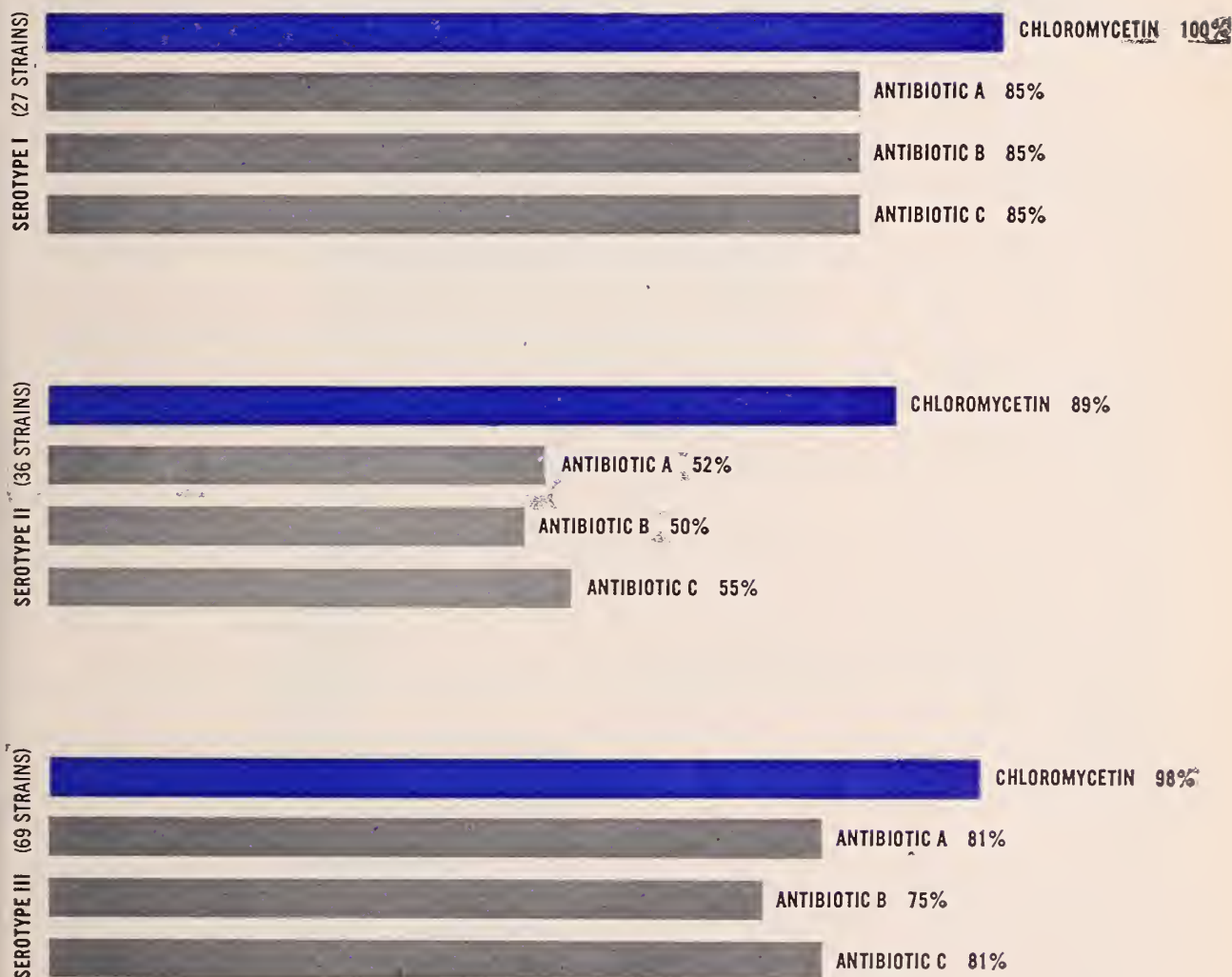
- (1) Metzger, W. I., & Jenkins, C. J., Jr.: *Pediatrics* 18:929, 1956. (2) Altmeier, W. A.: *Postgrad. Med.* 20:319, 1956. (3) Cohen, S.: *Postgrad. Med.* 20:483, 1956. (4) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956. (5) Bennett, I. L., Jr.: *West Virginia M. J.* 53:55, 1957. (6) Hughes, J. G., & Carroll, D. S.: *Pediatrics* 19:184, 1957. (7) Kempe, C. H.: *California Med.* 84:242, 1956. (8) Spink, W. W.: *Ann. New York Acad. Sc.* 65:175, 1956. (9) Yow, E. M.: *GP* 15:102, 1957. (10) Wise, R. I.; Cranny, C., & Spink, W. W.: *Am. J. Med.* 20:176, 1956. (11) Royer, A.: Scientific Exhibit, 89th Ann. Conv. Canad. M. A., Quebec City, Quebec, June 11-15, 1956.

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5	23	11	4	6½	5	700
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2	10	9	14	3	4½	5	520
3	12	10	15	3½	5	5	590
4	14	12	18	4	6	5	695
5	16	12	21	4	6½	5	695
6	17	13	22	4	7	5	730
7	18	14	21	3	7	5	710
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3	10	15	3½	5	4	650
4	12	18	4	6	5	768
5	12	21	4	6½	5	768
6	13	22	4	7	5	768
7	14	21	3	7	5	796
8	15	20	2	7	5	780
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1	8	22	2	4	6	440
2	9	24	2½	4	6	510
3	10	29	3	6	5	580
4	12	33	3½	7	5	690
5	13	33	3½	7	5	730
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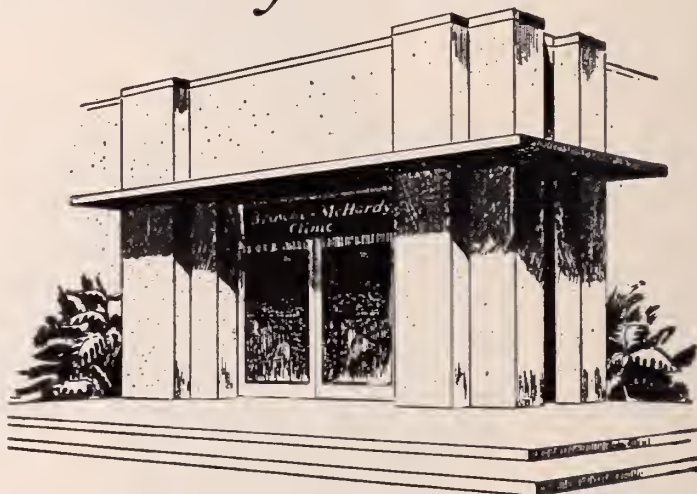
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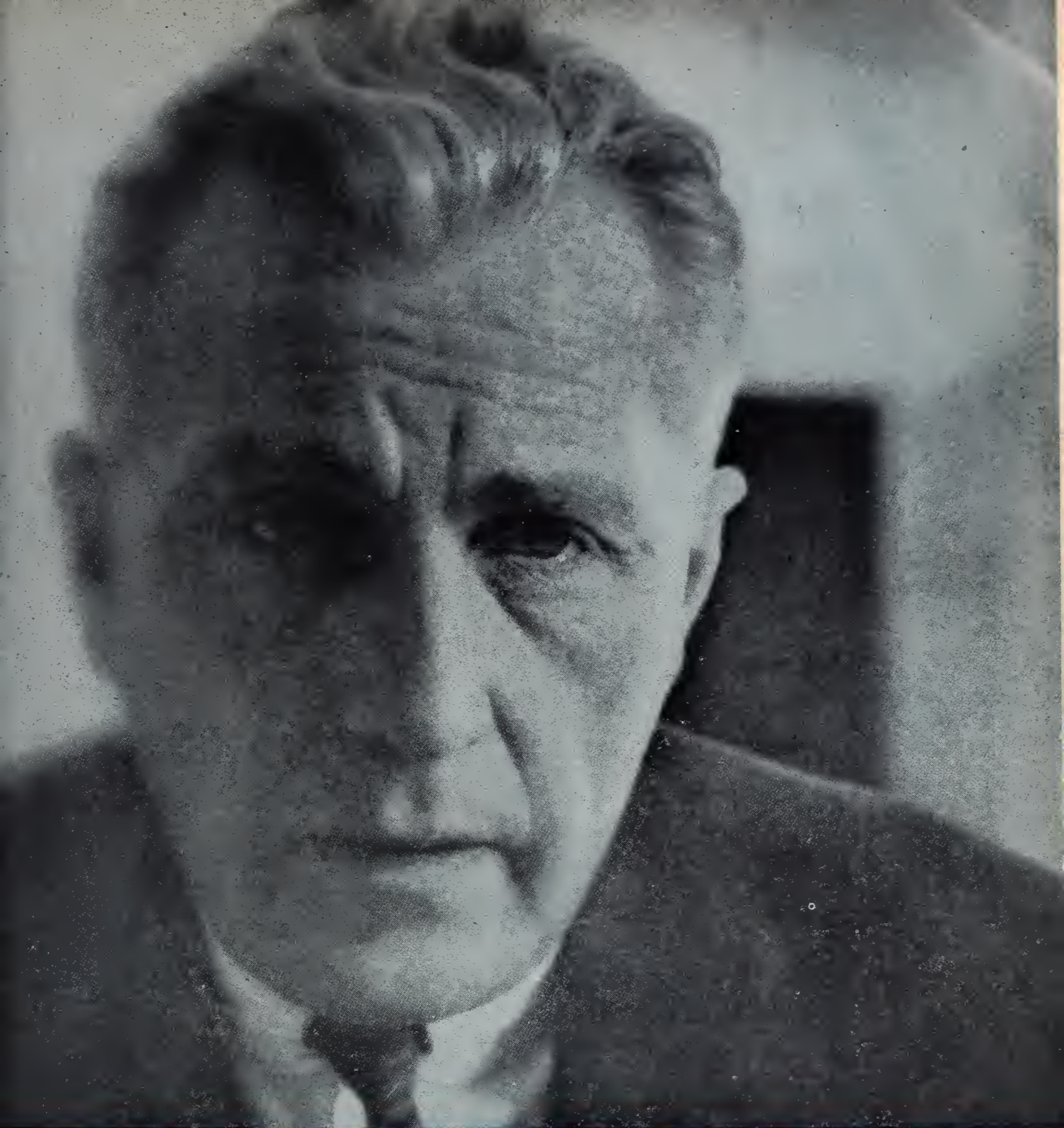
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References: 1. Borrus, J. C.: *M. Clin. North America*, press, 1957. 2. Gillette, H. E.: *Internat. Rec. Med. & G. P.*, 169:453, 1956. 3. Pennington, V. M.: *J.A.M.A.*, press, 1957. 4. Cayer, D.: Prolonged Anticholinergic Therapy of Duodenal Ulcer. *Am. J. Dig. Dis.* 1:301-309 (July) 1956. 5. McGlone, F. B.: Personal Communication to Lederle Laboratories. 6. Texter, E. C., Jr.: Personal Communication to Lederle Laboratories. 7. Bauer, H. G. and McGavack, T. H.: Personal Communication to Lederle Laboratories.

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-
1. Jackson, P. L.: Iron Deficiency Anemia in Infants, Editorial, *J.A.M.A.* 160:976 (Mar. 17) 1956.
 2. Martin, E. A.: *Roberts' Nutrition Work with Children*, Chicago, The University of Chicago Press, 1954, p. 211.

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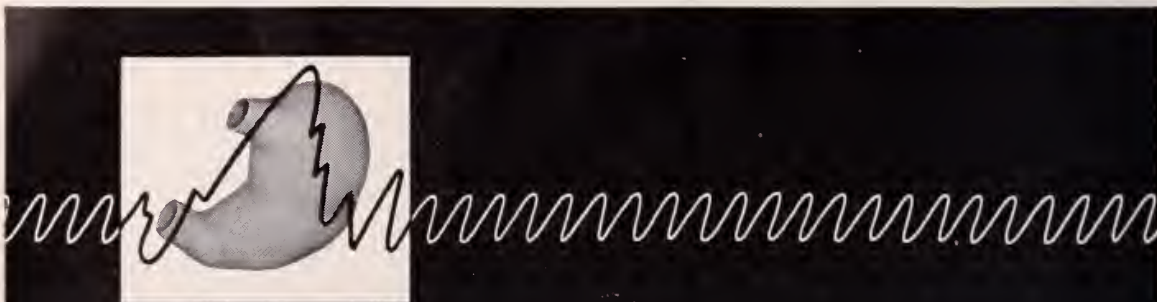
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SOME PROBLEMS IN THE CYTODETECTION OF CERVICAL CARCINOMA *

MALCOLM B. DOCKERTY, M. D. †
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Were it not for the almost simultaneous development about twenty years ago of two novel concepts in the diagnosis of cancer, I should not have ridden down on a cold front from Minnesota to discuss with you the problem of smears in connection with anything other than infertility.

The first concept—and one that encountered early and bitter opposition—was the belief, championed by MacCarty, that cytologic changes rather than histologic architecture were the most important criteria in the diagnosis of malignant tumors. For this he was accorded the sobriquet of “One-cell MacCarty.” In 1932, Broders described and gave the name “carcinoma in situ” to certain lesions of the skin, breast, colon, larynx and cervix that, although cytologically malignant, had not yet violated the basement membranes of their surfaces of origin. I should like to pay public tribute to these two investigators, since other workers, especially in the new

field of cytology, have neglected somewhat to do so.

The second important concept, developed by Papanicolaou, embodied the principle that malignant tumors growing on a free surface, such as that of the cervix uteri, exfoliated some of their cellular constituents and that these elements could be identified as individual malignant cells by cytologic studies on secretions, smears, and scrapings from the part involved. Most important was the demonstration that material shed from the surfaces of in situ cancers was fully as diagnostic as that derived from advanced neoplasms.

DEVELOPMENT AND USES OF CYTOLOGIC DIAGNOSIS

The race for discovering early cancer then took on the aspects of a stampede. Every conceivable body orifice was swabbed, scraped, washed, siphoned, aspirated, brushed, and massaged for its maximal yield of cells, some of which might be malignant. Studies were conducted in which the efficacy of smears was compared with that of biopsy. The problem of “false positive” and “false negative” smears was the center of much discussion. The theoretic and actual relations between in situ cancers and clinical cancers were explored statistically and otherwise. Terms like “pre-cancer” and “nearo-cancer” were born in an attempt to explain the occurrence of “suspicious” smears of dubious cellular parentage. From a welter of literature on these and allied aspects of the problems posed

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The Mayo Foundation, Rochester, Minnesota, is a part of the Graduate School of the University of Minnesota.

by smears, two practical observations emerged, namely, (1) smears are extremely valuable in the detection of pulmonary or uterine cancer and (2) smears can be employed successfully in the discovery of almost 100 per cent of cervical cancer in its silent, invisible, eminently curable, in situ stage.

As surgeons and clinicians, you are all too familiar with the poor results of current attempts to cure obvious cancer of the cervix. Despite employment of the best methods available, the outlook is such that only about 1 woman in 5 who is suffering from this dread disease has a life expectancy of ten years. In the United States alone about 18,000 women, many of them young, die annually from its effects. If, by some simple office procedure, physicians could detect these malignant growths at a time when they can be cured by ordinary surgical technics like conization, they would indeed be achieving a signal victory in the fight against cancer. It is the conviction of many workers, based on substantial evidence, that this preclinical, invisible, and readily curable phase of cervical cancer lasts, on an average, for periods in excess of ten years. These in situ growths have been followed by design or by accident into the invasive and highly fatal form in such an imposing number of patients that to many investigators the sequence is inevitable. For the doubting Thomases, the fact remains that perhaps 5 per cent of cervical cancers which are discovered by smears prove, in spite of their invisibility, to be infiltrating growths at the time of conization or hysterectomy.

At this juncture, it might be well to ask this question: "Are not conventional methods of biopsy adequate for the detection of these early lesions?" By way of answer, I should like to cite the experience of my colleagues and myself at the Mayo Clinic. From 1932 to 1946, a total of 32 biopsies were done on carcinoma in situ of the cervix. Last year alone, our program of cervical smears uncovered no less than 95 examples of this lesion from a comparable

cross section of clinic material. Currently, 5 of every 1,000 normal-appearing cervixes prove cancerous when examined cytologically, and some of these contain growths that already are infiltrating.

Better-informed patients now know about this "new" test and often request it. To deny it to others perhaps is to neglect an extremely useful laboratory examination for cancer. So convinced are my associates and I of its importance that we are currently planning a threefold expansion of our facilities for its routine employment.

The detection of malignant tumors by study of smears is no longer an expensive program to be undertaken only in large university centers. It has been emphasized repeatedly that every doctor's office can be a cancer-detection center in which the making of cervical smears is an integral part of all routine pelvic examinations. Group participation by local medical and surgical societies in such cities as Toledo has established excellent patterns for pooling resources in such programs.

The problem, then, is one of detecting a high percentage of early cervical malignant growths at a stage when they are amenable to surgical treatment and in which a cure rate approaching 100 per cent can be achieved. Cancers of the uterine fundus are rarely asymptomatic; they occur in older women and their routine detection by curettage leads to a satisfactory rate of cure, since these lesions usually grow slowly. The early discovery of malignant tumors of the vulva, vagina, tubes, and ovaries likewise does not depend too much on study of smears.

PREPARATION AND STUDY OF CERVICAL SMEARS

I have chosen purposely to detail a method of making smears directly from the cervix rather than from the vaginal pool. Study of material from the latter source perhaps uncovers a few more endometrial growths than can be found in the former but it will fail in 10 to 20 per cent of cervical growths that do not exfoliate cells into the vagina. Two other advantages that are gained by obtaining

smears directly from the cervix are: (1) The concentration of malignant elements is always greatest at their source of supply and (2) the quality of cellular preservation is likewise improved by any method that yields "picked fruit rather than windfalls."

Role of the Clinician.—The following directions should be carefully observed by the clinician.

1. Do not use lubricant on the speculum, since the presence of extraneous matter on the smeared slide makes examination of the latter impossible. The speculum may be warmed and moistened by use of tap water.

2. Gently wipe excessive secretions from the external cervical os with a cotton applicator.

3. Using firm pressure, rotate the special wooden spatula around the external os, being certain to obtain scrapings from the squamocolumnar junction.

4. Smear the scrapings quickly and evenly on a glass slide and without a second's delay immerse the slide in a jar of fixative (95 per cent alcohol or ether-alcohol mixture). Under no circumstances permit the secretions to dry on the slide prior to fixation.

5. Label the slide and container accurately. If the slide is to be mailed out of town, allow fifteen to twenty minutes for fixation. If it is to be examined locally, transport it immersed in the fixative until it is ready for staining.

6. For maximal yield, make smears on all women more than 25 years of age and from those younger women who have abnormal-appearing cervixes. Avoid taking smears while the patient is actively menstruating.

7. Do not biopsy the cervix at this time, and carefully unplug the office cautery.

Role of the Pathologist.—Three assumptions are necessary concerning the pathologist who now takes over; he must (1) believe in the entity of carcinoma in situ of the cervix, (2) be familiar with the interpretation of cytologic smears and (3) have help.

Each of these three items requires comment. It is utterly useless and twice as confusing to conduct a screening program designed to detect early cancer of the cervix if the tissue taken at biopsy from patients with positive smears is routinely diagnosed as "chronic cervicitis," "metaplasia," "basal cell hyperactivity" or other cant phrases. Smears made from in situ cancers contain cells that are indistinguishable from those which exfoliate from infiltrating growths. In situ cancers found by the smear technic should comprise from 90 to 100 per cent of the total, so it is prudent to be sure of the man behind the microscope.

With respect to the second item, the present requirements of the American Board of Pathology make it necessary that recently trained specialists in pathology be familiar with the interpretation of cytologic smears. Many of the older pathologists are conversant with the literature on the subject and are learning the technic through the medium of self-teaching. Short courses on exfoliative cytology are being conducted at a number of institutions, and the average pathologist attending such a course can become the key member of a screening team in a matter of weeks.

The problem of help for a busy pathologist is the biggest stumbling block in instituting these screening programs. Each cell in each smear must be viewed, a minimum of fifteen minutes being required to screen a single slide. The examination of two slides for each patient cuts in half the number of patients who can thus be studied. Examination of 25 smears per day per person approaches the maximum of visual endurance.

EXPECTED RESULTS OF A ROUTINE SCREENING PROGRAM

The use of trained technicians as cytologists provides the best solution to this bottleneck. After three months of special indoctrination, such technicians are each capable of staining and scanning smears at the rate of 5,000 per year. About 4,800 of these routine smears will be clearly negative. An additional 100 will con-

tain cells that the technician has marked and that will cost the pathologist many hours of toil and sweat before he gingerly consigns them to the negative category. There let them rest while the remaining 100 smears are considered.

This worrisome residue will be reported variously as being "positive" or "suspicious" for malignant cells. The task of uncovering the tissue source of these cells now goes back to the physician and his examining table. Employing Lugol's solution as an aid in defining the squamocolumnar junctional zone of the cervix, the physician removes from the cervix two to four pieces of tissue, which are cut deeply enough to insure proper orientation when they are embedded in paraffin. At this juncture, the office cautery is carefully put away in the cupboard, since to employ it in the arrest of minor bleeding is, in many instances, to destroy the very evidence of early carcinoma that the physician is trying so carefully to assemble. The fragments of tissue are placed in a small bottle containing a 10 per cent solution of formalin and are sent to the laboratory.

In perhaps 50 of these 100 worrisome cases, the pathologist within twenty-four hours reports the discovery of carcinoma, apparently *in situ*, in the material obtained at biopsy in the physician's office. In 25 additional cases, he may be satisfied that the presence of basal cell hyperactivity accounts adequately for what he has reported previously as "suspicious" cells. He may recommend that the patients in this group be followed, with repeated examination of smears at stated intervals. In the remaining 25 cases, he finds nothing at this stage to explain the "positive" smears.

The 75 patients whose cervixes require further and immediate investigation are hospitalized for conization biopsy. This includes the 50 patients whose office biopsies disclosed cancer and the 25 in whom biopsy failed to reveal the source of the "positive" smears. Here, again, I must apologize for uttering a word of

caution to the surgeon. Some of the cancers in this latter group of 25 patients are so small that they were missed during office biopsy. Too vigorous scrubbing of the cervix during the course of preoperative preparation of the vagina in the hospital may consign to the hamper of soiled linen the pinhead focus of cancer that gave rise to the worrisome cells found in the smear. Similarly, the performance of a useless and uninformative preliminary dilation and curettage has a crushing effect on delicate cells and a comparable one on the pathologist, who is seeking a generous cone of cervical tissue undisturbed by any preliminary maneuvers. The cone should extend from a base that is at least 5 mm. beyond the squamocolumnar junction to an apex at the endometrial cavity. It should be removed intact.

In our laboratory, because of the routine use of fresh frozen sections, we can cut, stain, mount, and examine material from 12 sections of these cones in as many minutes and report the findings to the surgeon. If the frozen-section technic is not available, it may be necessary to defer diagnosis for twenty-four hours or more until the material has been prepared by the paraffin method. In either instance, the pathologist may be expected to discover one or more foci of cervical cancer in the vast majority of cases. More than 90 per cent of the lesions will be *in situ*; thus, if conization of the cervix happens to be the surgeon's favored treatment, the patient will not need another operation. Some surgeons have had the experience of encountering recurrent carcinoma *in situ* after such minor sacrifice of tissue and, therefore, may elect to perform vaginal hysterectomy. From 5 to 10 per cent of the conized lesions will, surprisingly enough, reveal early carcinomatous infiltration, and the problem of radiation therapy versus radical hysterectomy will present itself. Residual neoplasm will not be detected in the surgically removed cone in perhaps 25 per cent of the cases in which the biopsy done in the office revealed carcinoma *in situ*. There are vari-

cus reasons for this; the tissue taken for biopsy included all the tumor, the cervix perhaps was touched with the cautery to control bleeding, the uterus was curetted prior to conization or the pathologist perhaps did not examine the cone thoroughly enough.

Finally, subsequent curettage is necessary for those patients in whom negative results were obtained on both biopsy and examination of the excised cone. This must be done in order to rule out the possibility of endometrial cancer before the smear is finally and sorrowfully classified in the categories of "false positive" or "false suspicious." It is a rare pathologist who does not harbor both these skeletons in his closet.

SUMMARY AND CONCLUSIONS

Routine study of cervical smears enables pathologists to detect an extremely high proportion of cervical cancers when they are in an asymptomatic, early, and eminently curable stage.

Incipient cancer of the uterine fundus, by contrast, gives warning symptoms. The making of smears from the vaginal pool for the detection of early fundal cancer is somewhat superfluous, and the method misses as many as 20 per cent of the more dangerous cervical lesions.

The pathologist who reports results of study of all cervical smears as either positive or negative is missing as many as 20 per cent of early lesions, which should have been discovered after they had been placed in a category labeled "suspicious cells present."

These early unsuspected lesions are extremely diminutive, and the hunt for them must be conducted as a co-operative venture, with observance of seemingly unimportant details.

POLIO IN CENTRAL LOUISIANA

THOMAS W. DAVIS, M. D.
ALEXANDRIA

The King Rand Polio Center, formerly The Mid-State Polio Center, was in con-

tinuous operation from June 1950 through December 1956. This center is unique in the state in that it was operated within the plant of a private hospital—Baptist Hospital, Alexandria—and was staffed totally by local physicians in private practice in the community. The program was financed by private gifts, by the local and National Polio Foundation, and at considerable financial expenditure by the Baptist Hospital over and above the grants. The staff also gave of their time for small financial remuneration. The Center was closed at the beginning of 1957, but is to be re-opened during polio epidemic season.

The purpose of this paper is to summarize some of the pertinent statistical data of the Center during this period and to investigate the unusually high incidence of polio in central Louisiana this past year in the face of an unusually low total U.S.A. incidence.

The majority of the patients of The King Rand Polio Center come from central and northeast Louisiana. The other two major centers at Shreveport and New Orleans are able to handle a greater number of patients than our Center, and in periods of peak admission patients were shunted from one center to another, depending upon bed space at the moment. Table 5 at the end of this paper shows the admissions by Parish in 1952 as compared to 1956.

TOTAL ADMISSIONS

Table 1 shows that 1125 patients were treated at the Center, 80 per cent being proved polio. There was a total of 35 deaths during that period. The rise in polio in 1956 over the three previous years is illustrated. The year 1950 would have shown a peak incidence, since the 183 admissions cover only seven months' operation in comparison to twelve months for the following years. It can be noted that there was no particular difference in the ratio of paralytic to nonparalytic during any of these years except the very low incidence in 1953. Nationally, the incidence of paralysis is about 40 to 45 per cent. A higher incidence of paralysis is common during the time of epidemics.¹

* Presented at the regular monthly meeting of the Rapides Parish Medical Society, Alexandria, Louisiana, May 14, 1957.

The nonpolio cases were those admitted for suspected polio, and later proved to be other diseases. The final diagnosis on these cases was an amazing array of infirmities ranging from purulent meningitis, encephalitis, rheumatic fever, measles, tonsillitis, and even a fractured radius in one instance. This, of course, is largely nonpreventable in a center for acute cases receiving patients from a wide rural area. A large percentage of the patients had had no spinal tap or other laboratory work prior to admission. This is also true in other centers of similar type.² The diagnosis of abortive and presumptive polio is always dubious and gradually most of the staff members confined their diagnoses either to paralytic or nonparalytic polio, or "not polio". In computing national figures at present the Public Health Service has abandoned the latter diagnosis. The 35 deaths give a death rate of 3.9 per cent.

TABLE 1

Year	Admissions	Paralytic	Non-paralytic	Abortive Pre- sumptive	Non-polio
1950	183	87 (52%)	50	9	37
1951	229	107 (64%)	53	6	63
1952	184	72 (51%)	64	1	47
1953	137	44 (40%)	64		29
1954	138	67 (56%)	41	9	21
1955	88	45 (60%)	25	4	14
1956	166	76 (56%)	59		31
Totals	1125	498 (56%)	356	29	242
Deaths: 35 (3.9% total polio)					
Total polio cases: 883					

SEASONAL INCIDENCE

The seasonal incidence of admissions is comparable to the national rate and verifies the observation that polio is a summer disease. (Figure 1) We invariably had a rise in June and a rapid drop-off in September and October.

EFFECT OF VACCINE

The age distribution chart (Table 2) comparing admissions (polio only) in 1956 to 1951 was prepared in an effort to determine if vaccination programs had lowered the rate in the grammar school age groups. This group (age 6 to 12) in Rapides Parish was approximately 70 per cent inoculated by the spring of 1956. The differences are not statistically significant. This same type study done on a national basis, however, showed a definite drop in the incidence of the infection in the school age group.

TABLE 2
AGE DISTRIBUTION

	1951	1956
Less 1 year	9 (5%)	4 (3%)
1 "	19 (11%)	19 (15%)
2 "	16 (9%)	15 (11%)
3 "	11 (7%)	7 (6%)
4 "	19 (11%)	7 (6%)
5 "	16 (9%)	9 (7%)
6 to 10 "	40 (23%)	26 (20%)
11 to 15 "	22 (12%)	25 (19%)
16 to 20 "	12 (7%)	8 (6%)
Over 20 "	11 (6%)	8 (6%)

Table 3, which includes Rapides Parish figures only, shows a definite drop in the percentage of paralytic cases in those that previously received the vaccine. There were 13 cases of polio in the group that received inoculation, and only 4 showed any paralysis. This is significantly lower than the nonvaccinated groups. On a national scope it has been concluded that the vaccine not only lowers the infection rate but also definitely prevents the seriousness of the infection.³

VIRUS TYPE

Patients admitted to the center received a detailed laboratory survey which included stool cultures for virus and virus typing. This was done by the Section of

TABLE 3
POLIOMYELITIS CASES SHOWING VACCINATED STATUS,
RAPIDES PARISH, 1956

	Total Cases	Vaccinated	Percent	Not Vaccinated	Percent
Total	61	13	21.3	48	78.7
Paralytic	31	4	12.9	27	87.1
Nonparalytic	30	9	30.0	21	70.0

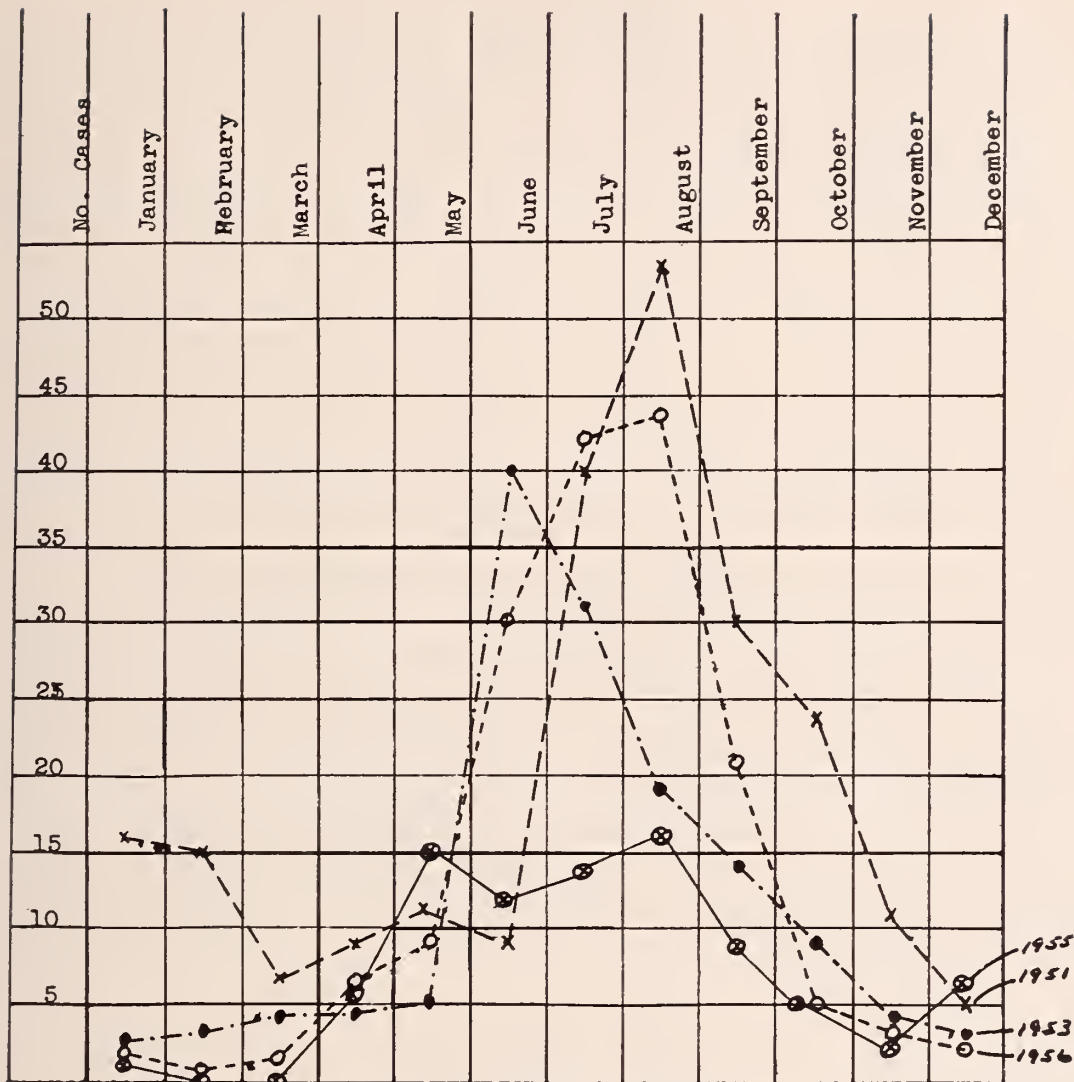


Figure 1.—Admissions per month.

Epidemiology of the State Department of Public Health under the direction of Dr. J. D. Martin. These records are incomplete as the studies were done 200 miles from the center and reports were frequently months in returning. Table 4 summarizes the return of cultures on 84

patients. As one might expect, there was a greater incidence of positive cultures in the more seriously ill patients. It was interesting that two cases diagnosed as "not polio" returned positive cultures.

Epidemiological centers have been typing polio virus since 1953, and gradually

TABLE 4
VIRUS DISTRIBUTION

Virus Type	Severe	Moderate	Slight	Nonparalytic	Total
I (Brunhelde)	20	11	6	8	45
III (Leon)	4	1		2	7
Negative culture		13		19	32
				Total	84

Note: 62% positive cultures

Two patients diagnosed as not polio had positive cultures, one Type I and one Type III

certain observations are becoming apparent.⁴ It has been found that Type I (Brunhelde virus) is much the most frequent cause of serious epidemics, and that Type II (Lansing) and Type III (Leon) are responsible usually for the sporadic infections throughout the country. Only a few small outbreaks have been due to Type III. Generally speaking, Type I infections are accompanied by a greater amount of paralysis. This fact has been confirmed by our study.

It has been observed that many clinically diagnosed cases of nonparalytic polio have sterile stools and, in some cases, other virus such as Cocksackie or Echo are isolated. It is thus becoming apparent that many of our sterile meningitis cases showing meningismus and muscle spasm, but no paralysis, are not polio at all. This would possibly explain our large number of negative cultures in those cases.

In conclusion, I take the liberty of expressing the pride of our Society and the Baptist Hospital in the operation of the King Rand Polio Center over six and one-half years. A great deal of credit should go to the late Dr. King Rand for having the foresight and ability to or-

ganize and head the staff of this institution. It is by examples of this type of individual initiative and collective work of a local society that progress is made in medicine.

SUMMARY

1. Admissions to the King Rand Polio Center, Alexandria, for the past six and one-half years are reviewed.

2. Eleven hundred and twenty-five cases were admitted for treatment: 80 per cent proved to be polio, 56 per cent paralytic.

3. The vaccine appeared to reduce the incidence of paralysis in the few inoculated cases infected.

4. Virus studies as to types are recorded and discussed.

REFERENCES

1. Martin, J. D.: Department of Epidemiology, Department of Public Health, New Orleans, Louisiana. Personal Communication.
2. Weinstein, Louis; Shelokov, Alexis; Seltser, Raymond; and Winchell, Gordon D.: A comparison of the clinical features of poliomyelitis in adults and in children, *New England J. Med.* 246:296 (Feb. 21) 1952.
3. Surveillance of Polio in the U. S. in 1956. Pamphlet—"Information for Physicians on the Salk Polio Vaccine" (Feb.) 1957.
4. Thrupp, Lauri D.: Polio Surveillance Unit, U. S. Public Health Service, Atlanta, Georgia. Personal Communication.

—O—

TABLE 5
NUMBER OF ADMISSIONS

Parish	1952	1956	Parish	1952	1956
Rapides	39	71	Ouachita	22	2
Concordia	2	5	Evangeline	2	0
Avoyelles	36	24	Acadia	0	1
Grant	5	4	Red River	1	0
Allen	9	14	Jackson	0	1
Franklin	3	2	Union	9	0
Vernon	8	12	Washington	0	1
Madison	3	0	Richland	7	0
Catahoula	4	9	Beauregard	2	1
Caldwell	2	0	Cameron	1	0
LaSalle	4	7	Natchitoches	5	0
Sabine	2	0	Lincoln	2	0
Calcasieu	8	6	Morehouse	0	2
Lafayette	1	0	Winn	3	1
Jeff. Davis	1	0	St. Landry	1	2
			West Carroll	4	1

NATURAL INFECTION WITH
POLIOMYELITIS VIRUSES AND
OTHER ENTERIC VIRUSES OF MAN *†HENRY M. GELFAND, M.D. ‡
NEW ORLEANS

For the past four years we have been engaged in a study of the processes of natural transmission of, and immunization with polioviruses in a selected population in southern Louisiana. As a by-product of that study we have necessarily become interested in and have accumulated information concerning the natural occurrence of other enteric viruses of man. With the advent and widespread use of "Salk" poliomyelitis vaccine, the study was modified in January 1956, in order to determine the effect of this "killed-virus" vaccine on the transmission of polioviruses under natural conditions. Several reports have already been published¹⁻³ and others are now in press.⁴⁻⁶ It is my purpose at this time to review briefly the results of that work, and to consider some of its implications to the physician in practice. Detailed presentations can be found in the previous publications. The results of similar studies in other parts of the country have recently been published,^{7, 8} and are in general agreement.

METHODS

The study population was recruited during 1953, with the active cooperation of practicing physicians in all three areas and health unit personnel in the areas outside New Orleans. It finally consisted of 157 households, each of which included a newborn baby to serve as a known non-immune index child. These families were divided as equally as possible into triad subgroups on the basis of area of residence, race and economic status, and fami-

ly size. Three study areas were established: New Orleans as an urban area of relatively low prior poliomyelitis morbidity, Baton Rouge as an urban area of relatively high prior morbidity, and the semi-rural, so-called "Evangeline area" (Lafayette, Iberia, St. Mary's and St. Martin's Parishes) of low past incidence. The three socio-economic categories were designated as Negro, white-lower economic, and white-upper economic. Despite the effort to recruit households with a high probability of continuing cooperativeness and stability, inevitable losses occurred. The original 157 families in January 1954, which included 686 older associates and five co-twins in addition to the index babies, had declined to 136 households by December 1955, and when vaccination was offered in January 1956, 18 additional families withdrew leaving 118 under observation. During 1956, 8 more were lost, although 9 new, closely related families were admitted during the year and many additional babies were born into study households.

Upon admission to the study a record was started for each household which included pertinent medical and epidemiological information. This record was kept current by visits at least once each month by a public health nurse. At admission, an initial blood specimen was obtained from each household member, for the determination of poliovirus antibodies as a baseline. Thereafter, a blood specimen was collected annually to detect changes that might have occurred without the involvement of the index child. Until the reorientation of the study with vaccination in January 1956, blood and stool specimens were collected from each index child at monthly intervals. Following vaccination, routine bleedings were done only with reference to the vaccine inocula, but stool specimens were collected twice each month from all children under 15 years of age. In any case, the detection of infection in any child, as indicated by serological change or by virus isolation, was the signal for a special visit to the household for

* Presented at the Seventy-seventh Annual Meeting of the Louisiana State Medical Society, New Orleans, La., May 8, 1957.

† The work principally reviewed in this paper was aided by a grant from the National Foundation for Infantile Paralysis, Inc.

‡ From the Division of Epidemiology, Department of Tropical Medicine and Public Health, School of Medicine, Tulane University of Louisiana, New Orleans.

collection of clinical and epidemiologic information as well as blood and stool specimens from all family and other indicated associates. This made it possible to determine the extent of homologous primary infection in other previously nonimmune household members, and, less precisely, the extent of reinfection in those previously immune.

The laboratory methods have been described in detail elsewhere.³ They consisted of standard and widely accepted methods utilizing in vitro tissue culture techniques for the detection of both fecal virus and serum neutralizing antibodies.

PATTERNS OF SERO-IMMUNITY TO POLIOMYELITIS IN THE STUDY POPULATION

It must be understood that the households included in this study do not constitute a random cross-sectional sample of the Louisiana population, but they are, however, representative of families with children in important population groups in southern Louisiana.

Examination of the initial sera collected in 1953 showed that sero-immunity to all

three poliovirus types is abundantly present in the study areas, and is acquired at a comparatively early age. Figure 1 shows the age-specific percentages of immunity to each of the virus types in the study population. By school age an average of 69 per cent of individuals had acquired antibodies to any one virus type. The acquisition of sero-immunity to the three types appears to have proceeded at very nearly the same rate except for an apparent lag in Type 3 in young children. This suggested that infections with Type 3 virus had been less frequent in this area during several years prior to 1953, and that the relative deficiency in immunity to this type might set the stage for an epidemic of Type 3 infections during the next "polio season." As shown in Table 2, during 1954, Type 3 infections did predominate, occurring over three times as frequently as Type 1 infections. Figure 2 shows the reflection of this in the sero-immune patterns in the young child population. By January 1955, Type 1 sero-immunity was deficient as compared to Type 3, and during that year Type 1 infections predominated.

To demonstrate differences in immunity patterns on the basis of race and economic status, average age-specific percentages were derived from the values for each of the three types. Figure 3 contrasts the pattern of sero-immunity in the three socio-economic groups. Overall the Negro group has the highest percentage of immunes (78 per cent) and the white-upper-economic group the lowest (64 per cent). During the two years that followed, the Negro group continued to acquire poliovirus infections and immunity at a faster rate than the white-upper group.

Differences in percentage of immunes between the three geographic areas did not become apparent until the three socio-economic groups were studied separately. Then it became evident that, although the Negro groups showed high percentages of immunes in all three communities, both white groups had significantly lower percentages in Baton Rouge than in either

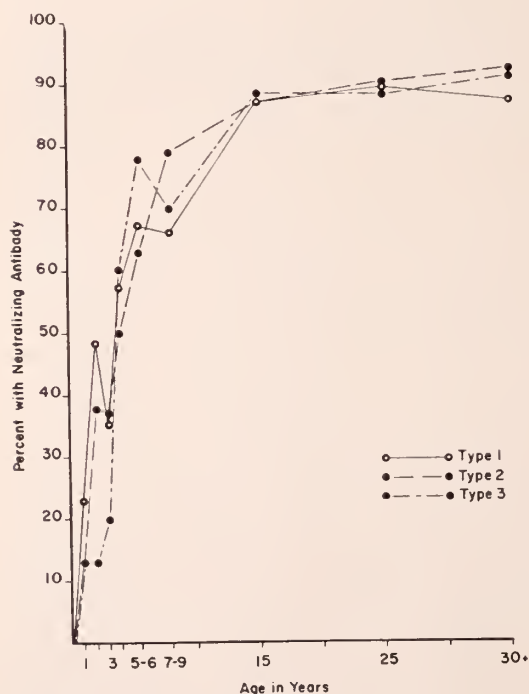


Figure 1.—Age-specific percentages of household associates of index children with neutralizing antibodies to types 1, 2, and 3 polioviruses when admitted to the study in 1953. (Reproduced with permission of the American Journal of Hygiene.⁴

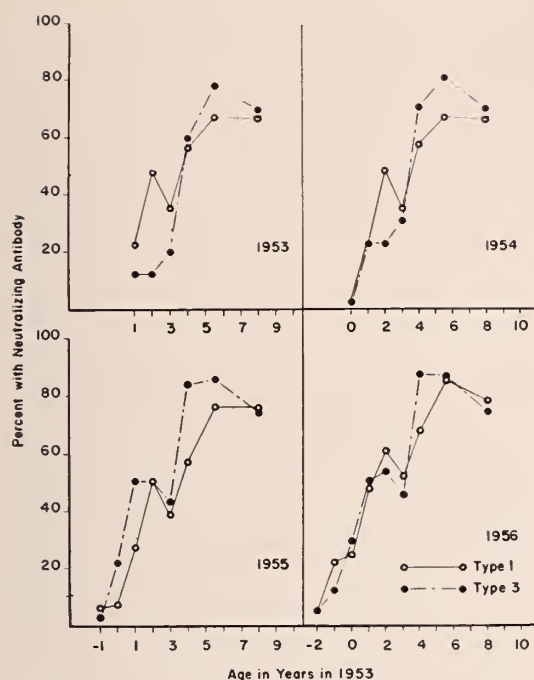


Figure 2.—Age-specific percentages of older siblings, original index children and their younger siblings § with neutralizing antibodies to types 1 and 3 polioviruses upon initiation of study in 1953 and at the beginning of the years 1954, 1955, and 1956, by years of age in 1953. (Reproduced with permission of the American Journal of Hygiene)⁴

New Orleans or the Evangeline area. This is consistent with the relatively high past incidence of poliomyelitis disease in Baton Rouge.

POLIOVIRUS INFECTION EPISODES IN 1953-55 (BEFORE VACCINATION)

During an average of thirty months between the date of recruitment and January 1956, there were 114 household episodes of infection which involved an index child. These resulted in 253 primary infections of index children and their previously nonimmune household associates, and in the reinfection of at least 65 of their previously immune associates. Study of annual sera revealed 10 other abortive episodes which failed to involve the index baby but which caused an additional 24 primary infections.

§ Index children, born in 1953, do not figure in data until 1954; their younger siblings, born in 1954 and 1955, do not appear until 1955 and 1956, respectively. In this presentation maternally derived antibodies have been ignored.

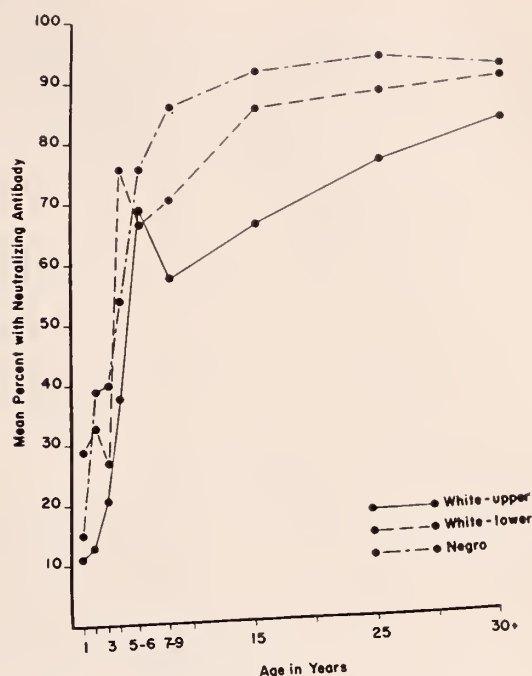


Figure 3.—Age-specific means ** of the percentages of older household associates †† with neutralizing antibody to each type of poliovirus upon admission to the study in 1953, by socio-economic or racial group. (Reproduced with permission of the American Journal of Hygiene)⁴

Table 1 indicates for three complete years, 1954-1956, the seasonal distribution of those household episodes of infection which could be defined as to month of occurrence. Infections occurred in every month of the year, but with a marked peak in the summer.

When one examines the distribution of infection episodes by area during these three years of observation (Table 2), he is impressed with the absence of a consistent pattern. Each area experienced many episodes, but what occurred in any one gave little hint of what might be expected elsewhere, either in terms of the total number of infections or of the predominant virus type.

Race and economic status, as well as family size were important in determining the likelihood that poliovirus in-

** Mean value of the percentages with antibody to each of the three virus types.

†† Limited to persons still under observation as of January 1956, when final sera were collected.

fection would enter the home. In general, infections were more common in index children in the poorer environments of the Negro and lower economic white groups. They were also more frequent in households where two or more older siblings were present.

The age at which infections occurred in index babies gave no suggestion of periods of increased susceptibility. Infection was detected in one child only 23 days of age, and a total of 20 occurred during the first six months of life, four of the latter despite the demonstrated presence of maternally-derived passive antibody.

The examination of specimens collected on special visits made to the households following infection of an index child and the examination of annual sera, made it possible to show, as in Table 3, the primary infections that occurred in all homologously nonimmune individuals, including index babies, when any one person became infected in the home. It is evident that intrafamilial spread of poliovirus infection is the rule, particularly among children. Less than 10 per cent of susceptible children escaped infection, and for some of these an explanation was readily available, such as protracted ab-

sence from the home or unusual isolation from other family members. Not indicated in the table is the fact that many of the "missed" children were babes-in-arms whose exposure opportunities may have been reduced. A greater percentage of adults missed infection, probably also related to the lesser likelihood of fecal contamination.

Reinfection of homologously immune household associates was proved either serologically or by virus isolation in 21 per cent of such individuals. This is a minimal figure—an estimate, based on indirect evidence, of at least 50 per cent is probably closer to the truth. However, fecal virus was much less frequently detected in reinfecting persons (about 7 per cent) than in those undergoing primary infection (about 42 per cent).

Suggestive evidence was obtained for spread between adjacent households and within the neighborhood. Direct, frequent, play contact between two or more households within our study group was established in relation to 7 infection episodes. Infections were detected simultaneously in the associated households in 3 instances, and in another 3 instances it followed in the related household one month later.

TABLE 1
MONTHLY DISTRIBUTION OF EPISODES OF HOUSEHOLD INFECTION WITH
POLIOVIRUSES IN SOUTHERN LOUISIANA IN 1954-1955, BEFORE VACCINATION,
AND IN 1956, AFTER TWO INOCULATIONS OF "SALK" VACCINE

Year	Number of Episodes in Month Indicated												Total
	J	F	M	A	M	J	J	A	S	O	N	D	
1954	0	0	1	0	3	7	19	6	7	10	2	2	57
1955	5	0	3	4	3	4	8	12	3	0	3	3	48
1956	0	2	2	3	5	10	8	8	2	5	0	0	45
Total	5	2	6	7	11	21	35	26	12	15	5	5	150

TABLE 2
DISTRIBUTION OF EPISODES OF HOUSEHOLD INFECTION WITH POLIOVIRUSES IN
SOUTHERN LOUISIANA BY AREA, YEAR, AND VIRUS TYPE IN 1954-1955, BEFORE
VACCINATION, AND IN 1956, AFTER TWO INOCULATIONS OF "SALK" VACCINE

Area	Number of Infections of Indicated Type in the Year:															
	1954				1955				1956				Total			
	1	2	3	Total	1	2	3	Total	1	2	3	Total	1	2	3	Total
New Orleans	7	4	9	20	12	4	2	18	5	0	3	8	24	8	14	46
Baton Rouge	1	6	11	18	7	11	0	18	3	4	4	11	11	21	15	47
Evangeline	0	10	9	19	6	0	6	12	20	0	6	26	26	10	21	57
Total	8	20	29	57	25	15	8	48	28	4	13	45	61	39	50	150

TABLE 3
PROVED INFECTIONS IN PREVIOUSLY NON-IMMUNE INDIVIDUALS RESIDENT IN
HOUSEHOLDS UNDERGOING EPISODES OF POLIOVIRUS INFECTION IN 1953-1955, BEFORE
VACCINATION, AND IN 1956, AFTER TWO INOCULATIONS OF "SALK" VACCINE *

Category of Person	Infections Occurring in the Indicated Year					
	Number of Persons Susceptible	1953-1955		Number of Persons Susceptible	1956	
		Infected			Infected	
		Number	Per Cent		Number	Per Cent
Adult	23	15	65	6	2	33
Child	284	262	92	95	87	92
Total	307	277	90	101	89	88

* Including households with "abortive" episodes in which the index child escaped infection.

Only in one did the related household escape infection entirely. In several episodes study group households had no direct contact but were located at varying distances from each other in the same neighborhood. Here also, infection was usually found in both houses, either simultaneously or at intervals up to two months.

It was usually not possible to follow the chronology of infection within a given household, but several fortuitous observations permit the general statement that infection apparently is introduced into the home by a child of pre-school or early school age. From him, infection spreads almost simultaneously to all other non-immune members of the family.

Clinical histories, taken shortly after the infection episodes were detected, revealed no illness in relation to 72 per cent of the primary infections. Minor febrile illness at an appropriate time was recorded for 24 per cent of such persons, and in 9 instances (4 per cent) minimal aseptic meningitis was suggested in retrospect. There were no cases of paralytic

disease. The ratio of overt poliomyelitis to poliovirus infections, estimated very crudely by comparing the calculated number of infections in the entire population of Louisiana in 1954 and 1955 with the number of cases reported in those years, was approximately 800 infections for every one diagnosed case.

POLIOVIRUS INFECTION EPISODES IN 1956
(FOLLOWING VACCINATION)

In January and February 1956, using "Salk" vaccine of a single lot and kindly provided by the Louisiana State Department of Health, a 2-dose primary course of vaccine was given to all children in study group households below the age of 15 years who did not already possess antibodies to all three types of poliovirus. No ill effects were noted as a result of vaccination.

The response to vaccination in children who were immunologically inexperienced or only partially experienced with polioviruses from prior infection is shown in Table 4. Two important facts are immediately evident; there was a marked

TABLE 4
APPEARANCE OF NEUTRALIZING ANTIBODY ONE MONTH AFTER TWO INOCULATIONS
OF "SALK" POLIOMYELITIS VACCINE

Number inoculated	Pre-vaccination immunity	Post-vaccination Immunity-per cent of Inoculated Children Responding to Indicated Type								
		Type 1			Type 2			Type 3		
		No re- sponse	Low* Titer	High† Titer	No re- sponse	Low Titer	High Titer	No re- sponse	Low Titer	High Titer
118	None	36	30	34	26	21	53	60	23	18
94-97	Heterologous ‡	10	22	68	8	14	77	18	32	50

* Titer less than 1:10

† Titer 1:10 or greater

‡ Persons immune to one or two virus types. Response is shown only to the type or types not present prior to vaccination.

difference in antigenic potency between types, type 2 being the most effective and type 3 the least, and response to vaccination for any individual type was greater in children who had had some previous natural experience with other poliovirus types. Nevertheless, even in the latter group there was a significant proportion of children who had no detectable response, although it must be remembered that only the primary course of two inoculations had been given. Incomplete results of tests for neutralizing antibody following the third or booster inoculum, given in January 1957, show that with very few exceptions, these children had had a satisfactory priming stimulus, and were responding to the third "shot" with readily detectable antibody in high titer.

In 1956, there were 47 episodes of natural infection among the 118 households remaining under observation. Two of these were in single individuals undergoing reinfection and would not have been detected by the methods used from 1953 through 1955. The remaining 45 episodes are comparable, and it is evident that vaccination did not reduce the frequency of household infections. The monthly distribution of infections (Table 1) was also not altered, and the pattern of household episodes with the three types in the three study areas (Table 2), remained sporadic and difficult to interpret.

Perhaps of greatest interest is the extent of intra-household spread after virus is introduced, and Table 3 compares this phenomenon before and after vaccination. Among the children, there was no difference whatsoever, and between the small groups of adults the difference had no statistical significance. Table 5 helps to

show why this was so. The duration of fecal virus excretion by infected children who were vaccinated but who had no prior infection immunity (forty-four days) was essentially as long as that by unvaccinated children (fifty-one days). The duration of excretion by naturally immune, reinfected persons was much shorter (twenty-two days). In addition to the duration of excretion, the quantity of virus excreted was studied, and the mean titer of virus in the first positive stool specimen from vaccinated and unvaccinated children was exactly the same.

INFECTIONS WITH OTHER HUMAN ENTERIC VIRUSES

Knowledge concerning enteric virus infections in man, other than poliovirus, is of very recent origin and is accumulating at a rapid rate at the present time. These agents were first encountered in 1948 as incidental findings in the feces of poliomyelitis patients. Their discovery stimulated a great deal of interest, at first because of their possible relationship to poliomyelitis, and more recently because of their defined role in the production of other disease syndromes.

Many viruses which are probably only passengers from loci of infection in the throat and respiratory system, e.g. adenoviruses, mumps, influenza, and herpes simplex may be found on occasion in human feces. Two other groups are recognized as primarily enteric in nature, the Coxsackie viruses⁹ and the orphan or ECHO (enteric cytopathogenic human orphan) viruses.¹⁰ The agent of infectious hepatitis is almost certainly also a true enteric pathogen, but it has not been positively identified.

Both the Coxsackie and ECHO groups

TABLE 5
DURATION OF FECAL POLIOVIRUS EXCRETION IN CHILDREN INFECTED IN 1954-1955,
BEFORE VACCINATION, AND IN 1956, AFTER TWO INOCULATIONS OF "SALK" VACCINE

Previous Immunity Status	1954-1955				1956			
	Number excreting virus	Days duration		Estimated true mean	Number excreting virus	Days duration		Estimated true mean
		Observed				Observed		
		Range	Mean			Range	Mean	
Non-immune	110	1-114	24	51	84	1-105	26	44
Immune	—	—	—	—	16	1-43	7	22

have been incriminated as the etiological agents of human disease. Epidemic pleurodynia, aseptic meningitis, myocarditis of the newborn, herpangina, and "summer grippé" are believed to be possible manifestations of Cocksackie virus infection.^{11, 12} Aseptic meningitis has been associated with ECHO viruses,¹³ and some diarrheal syndromes may be the result of infection with these or similar agents.¹⁴ However, in both groups the individual antigenic types differ in their pathogenicity; some types may never, or only rarely, cause disease.

Our contribution to this subject has been the demonstration of the ubiquity of enteric virus infections in this area.⁶ Previously, fecal surveys in Cincinnati and in Mexico City and Vera Cruz, Mexico¹⁵ and a longitudinal study over two years' time in Winston-Salem¹⁶ had shown the frequency with which young children are infected. Based on the stool specimens obtained for the detection of poliovirus infection in our index children, it was also possible to show the enteric viral burden of these healthy children in southern Louisiana. Figure 4 represents a summary of the monthly percentages of virus isolations over a two-year period, 1954-1955. The viruses have been divided into only two categories: polioviruses (including all three types) and non-polio viruses. The

latter are being studied in our laboratory now by Dr. Wolf Henigst. Preliminary results indicate that about 25 per cent are Cocksackie types, 25 per cent are ECHO types, and the remaining 50 per cent are still unidentified.

It is evident that enteric viruses are being excreted throughout the year in this area, and with peaks in the summer and autumn months. For the total index child group, infections reached a maximum of 29.9 per cent in July 1954. Smaller segments of the population gave even higher percentages; for the New Orleans group only, it was 38 per cent in September 1955, and for the Negro part of the group in that month was 64 per cent.

The effect of socio-economic status was demonstrable; both virus groups were found with greatest frequency in the Negro and least often in the white-upper economic populations. Family size did not show a demonstrable effect. Although not studied in detail, the non-polio viruses also tended to occur in family episodes, and such episodes tended to be confined to the younger members of the family. Epidemiologically these agents will probably be demonstrated to behave in a manner very similar to the polioviruses.

DISCUSSION

We believe that the data accumulated during the course of this and similar studies help to provide a rational basis for the management of the patient and the community in the prevention of poliomyelitis and other diseases which result from enteric virus infection. Some of the conclusions to be derived from this work will appear negative in the sense that they suggest that action not be taken. However, in the handling of a disease with the emotional overtones of poliomyelitis, moderation and restraint may be helpful suggestions.

Fundamental concepts which we believe have been demonstrated are as follows. Human enteric viruses are almost ubiquitous, and infection with polioviruses, and probably many others of the enteric group, are essentially inevitable during any nor-

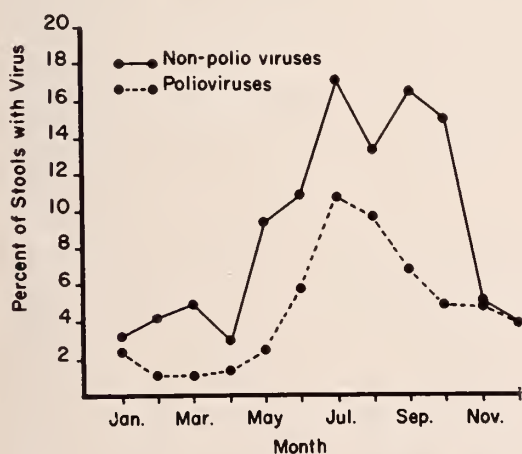


Figure 4.—Mean monthly percentages of stool specimens from healthy children in southern Louisiana found to contain polioviruses and other enteric viruses, 1954-1955.

mal lifetime. The degree to which different populations are saturated with these viruses undoubtedly varies, but southern Louisiana is a highly endemic area. Within any locality, the intensity of infection varies with socio-economic status (related to inter- and intra-household crowding, level of personal hygiene, etc.), and in descending order of the frequency of infection here are the Negro, white-lower economic, and white-upper-economic segments of the population. Polioviruses of all three types are usually present in the community, the predominant type being determined by the number of children non-immune to each. Finally, these viruses are circulating throughout the year, but are much more abundantly present during the summer and autumn months, perhaps due to the greater frequency of intimate play contact among lightly clad young children during the warmer part of the year.

Within the community, polioviruses are probably spread primarily in a horizontal manner through the pre-school child population. This is suggested because: (1) the majority of the population is serologically immune by school age. (2) Immune individuals, even if reinfected, are less effective shedders of virus. (3) Young children have the lowest hygienic standards within any given socio-economic class and thus provide the most effective cohort for spread. (4) In the few instances where we were able to define the individual responsible for bringing the virus into the household, it was a child of this age. After virus is within the home, secondary spread in a vertical manner to older and younger associates not yet immune to the specific type occurs rapidly because of the greater intimacy of contact between family members.

A primary course of two inoculations of poliomyelitis vaccine of the "killed" type ("Salk vaccine") may well be of real value in preventing disease in the individual,¹⁷ but it has no effect in reducing infection and transmission. This is very reassuring since it permits the continuing

process of natural immunization before the potential "wearing-off" of vaccination immunity over the years. The phenomenon suggests, however, that oral vaccination with living, attenuated poliovirus strains, which more closely reproduces the natural process and which may result in life-long protection, is desirable. Neither vaccine, however, could have even a prophylactic effect if given to a family after demonstrated illness in a member because by the time illness is recognized all previously nonimmune individuals have already been infected. Even in a community the effectiveness of vaccine in stopping an epidemic may be limited because of the widespread infection that has already occurred by the time the epidemic is recognized. For vaccine to be maximally effective, therefore, it should be administered before the need becomes apparent.

Measures other than vaccination for community protection from poliomyelitis are limited. Infection is occurring constantly—perhaps we should say immunization, to accent the positive—and as long as it is subclinical, should be aided rather than hindered. Disease in the individual probably results both from personal factors, such as fatigue, provocative inoculations, tonsillectomy, and the age at which infection occurs, and from the relative virulence of virus strains. Since virus excretion is both prolonged in the individual and widespread in the community, personal and public quarantines are not likely to be very helpful. During a sharp epidemic, in which an unusually virulent strain can be presumed to be circulating, the limitation of large gatherings of children may be considered, but if it is, it must be evaluated in terms of the opportunity such gatherings provide for intimate contact, and a church picnic may be more dangerous than the oft-condemned swimming pool. Personal recommendations by the family physician for the avoidance of excessive fatigue and of unnecessary inoculations, prompt bed rest for suspicious summertime illnesses, and early prophylactic vaccination remain the most useful

preventive measures.

SUMMARY

A group of families in New Orleans, Baton Rouge and 4 semi-rural parishes in south Louisiana, of differing socio-economic status and differing size, have been under observation since 1953 in a study of the natural transmission of enteric viruses. Based on serological evidence in associates of the newborn index child in each household, the pattern of immunity to poliomyelitis in this area was determined. It indicated the early acquisition of antibodies to all 3 poliovirus types as well as differences related to socio-economic status and family size. One hundred and twenty-four episodes of household infection with polioviruses were found prior to "Salk" vaccination in January 1956, and 47 following vaccination. Infections occurred throughout the year, but most commonly in the summer, and in individuals of all ages. Spread of virus through the family and the community was observed, and the ease with which transmission occurs was noted. A primary course of two inoculations of "Salk" vaccine was given to all nonimmune children early in 1956, and vaccination was found not to change the pattern of infection and transmission in any significant manner during the following year. The ubiquity of infections with enteric viruses other than those of poliomyelitis was demonstrated, and their occurrence compared with the polioviruses. Finally, the implications of these findings to the practicing physician in the prevention of disease resulting from enteric virus infection was discussed.

REFERENCES

1. Fox, J. P., Gelfand, H. M., Bhatt, P. N., LeBlanc, D. R., and Conwell, D. P.: Immunizing infections with poliomyelitis viruses and sero-immune patterns in southern Louisiana, *Ann. N.Y. Acad. Sci.* 61:968 (September 27) 1955.
2. Fox, J. P., Gelfand, H. M., LeBlanc, D. R., and Conwell, D. P.: A continuing study of the acquisition of natural immunity to poliomyelitis in representative Louisiana households, *Amer. J. Pub. Hlth.* 46:283 (March) 1956.
3. Gelfand, H. M., Fox, J. P., and LeBlanc, D. R.: Observations on natural poliovirus infections in immunized children, *Amer. Jour. Pub. Hlth.* 47:421 (April) 1957.
4. Fox, J. P., Gelfand, H. M., LeBlanc, D. R., and Conwell, D. P.: Studies on the development of natural immunity to poliomyelitis in Louisiana. I. Overall plan,

methods, and observations as to patterns of sero-immunity in the study groups, *Amer. J. Hyg.* (March) 1957 (in press).

5. Gelfand, H. M., LeBlanc, D. R., Fox, J. P., and Conwell, D. P.: Studies in the development of natural immunity to poliomyelitis in Louisiana. II. Description and analysis of episodes of infection observed in study group households, *Amer. J. Hyg.* (March) 1957 (in press).

6. Gelfand, H. M., Fox, J. P., and LeBlanc, D. R.: The enteric viral flora of a population of normal children in southern Louisiana, *Amer. Jour. Trop. Med. & Hyg.* 1957 (in press).

7. Melnick, J. L., Walton M., Isaacs, P., and Cardwell, W.: Environmental studies of endemic enteric virus infections. I. Community sero-immune patterns and poliovirus infection rates, *Amer. J. Hyg.* 65:1 (January) 1957.

8. Isaacs, P., Melnick, J. L., and Walton, M.: Environmental studies of endemic enteric virus infections. II. Poliovirus infections in household units, *Amer. J. Hyg.* 65:29 (January) 1957.

9. Daldorff, G.: The Cocksackie virus group, *Ann. N.Y. Acad. Sci.* 56:583 (March) 1953.

10. Committee on the ECHO Viruses: Enteric cytopathogenic human orphan (ECHO) viruses, *Science* 122: 1187 (December) 1955.

11. Seltser, R.: An evaluation of the role of the Cocksackie group of viruses as etiological agents of central nervous system disease in man, *Military Med.* 119:106 (August) 1956.

12. Kibrick, S., and Benirschke, K.: Acute aseptic myocarditis and meningoencephalitis in the newborn child infected with Cocksackie virus Group B, Type 3, *New Eng. J. Med.* 255:883 (November) 1956.

13. Karzon, D. T., Barron, A. L., Winkelstein, W., Jr., and Cohen, S.: Isolation of ECHO virus Type 6 during outbreak of seasonal aseptic meningitis, *J.A.M.A.* 162: 1298 (December) 1956.

14. Sabin, A. B.: The significance of viruses recovered from the intestinal tracts of healthy infants and children, *Ann. N.Y. Acad. Sci.* 66:226 (August) 1956.

15. Ramos-Alvarez, M., and Sabin, A. B.: Intestinal viral flora of healthy children demonstrable by monkey kidney tissue culture, *Amer. J. Pub. Hlth.* 46:295 (March) 1956.

16. Honig, E. I., and others: An epidemiological study of enteric virus infections, *Journ. Exper. Med.* 103:247 (February) 1956.

17. Langmuir, A. D., Nathanson, N., and Hall, W. J.: Surveillance of poliomyelitis in the United States in 1955, *Amer. Journ. Pub. Hlth.* 46:75 (January) 1956.

HOSPITAL FACILITIES IN LOUISIANA, 1953

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BATON ROUGE

In order that physicians of Louisiana may readily acquaint themselves with some of the facts concerning hospital fa-

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cilities in their state and particularly with how these facilities compare with those of other states, a series of maps and charts has been prepared from data in the hospital supplement of *The Journal of the American Medical Association* for 1954.¹ While these data do not reflect the recent developments, the general situation has not been drastically altered. These illustrations give convincing evidence that hospital services in this state, considered as a whole, occupy an advantageous position in the Southern Region and, indeed, make a relatively favorable showing in the entire nation.

In the first pictorial presentations, Figures 1 and 2, volumetric symbols

NON-PROFIT AND PROPRIETARY HOSPITALS. 1953

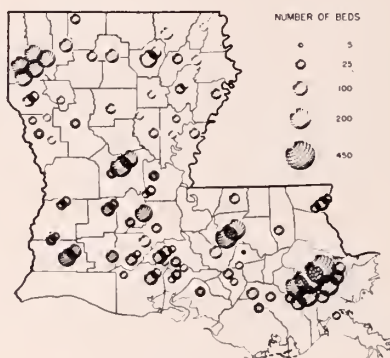


Figure 1

(spheres) are used to indicate numbers of general hospital beds. The location of private hospitals, as depicted in Figure 1, generally follows population distribution, providing a more uniform coverage of the state than do state hospitals, shown in the next figure. Note the larger spheres representing the larger hospitals in New Orleans, Baton Rouge, Alexandria, and Shreveport. The populous Southern part of the state maintains more of the smaller individual hospitals which primarily provide general hospital beds. There are 8,040 private general hospital beds in Louisiana.

STATE HOSPITALS, 1953

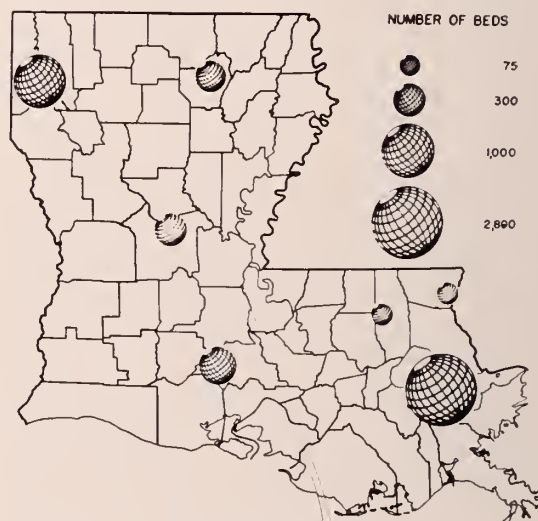


Figure 2

Figure 2 depicts the general hospitals of the state system in 1953, which are: Charity Hospital in New Orleans, Lallie Kemp in Independence, Washington and St. Tammany Charity Hospital in Bogalusa, Lafayette Charity Hospital, Huey P. Long Hospital in Pineville, E. A. Conway Memorial Hospital in Monroe, and Confederate Memorial Hospital in Shreveport. In Louisiana virtually all public medical care is furnished by the state at no direct cost to the patient. In 1953 there were 4,804 general hospital beds in these state hospitals.

Figure 3 shows the comparative standing of Louisiana and other states in the category of all general hospital beds, both private and public types. Louisiana is considerably better supplied with these hospital beds than other Southern States, and it ranks with the states of New York, Pennsylvania, California, Wisconsin, and others in this category of hospital beds.

Figure 4 presents local and state governmental hospital beds of all types, including mental hospitals. Again, in this comparison, Louisiana outranks the other

GENERAL HOSPITAL BEDS BY STATES, 1953

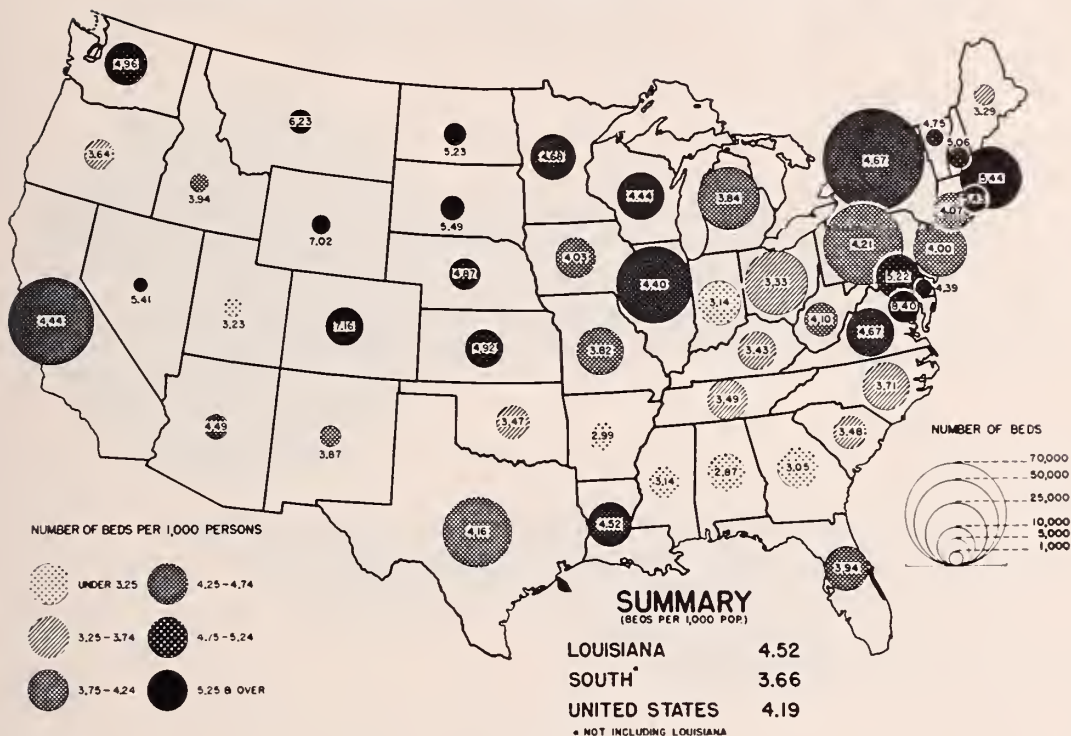


Figure 3

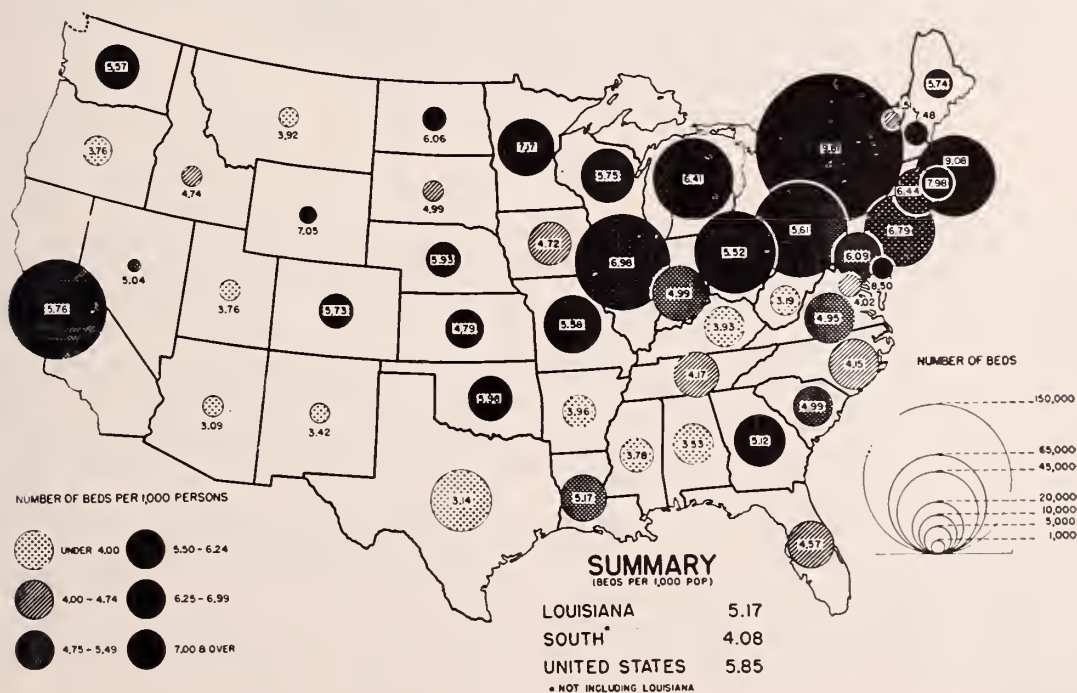
GOVERNMENTAL HOSPITAL BEDS (EXCEPT FEDERAL)
BY STATES, 1953

Figure 4

THE NATION'S LARGEST HOSPITALS: A COMPARISON, 1953

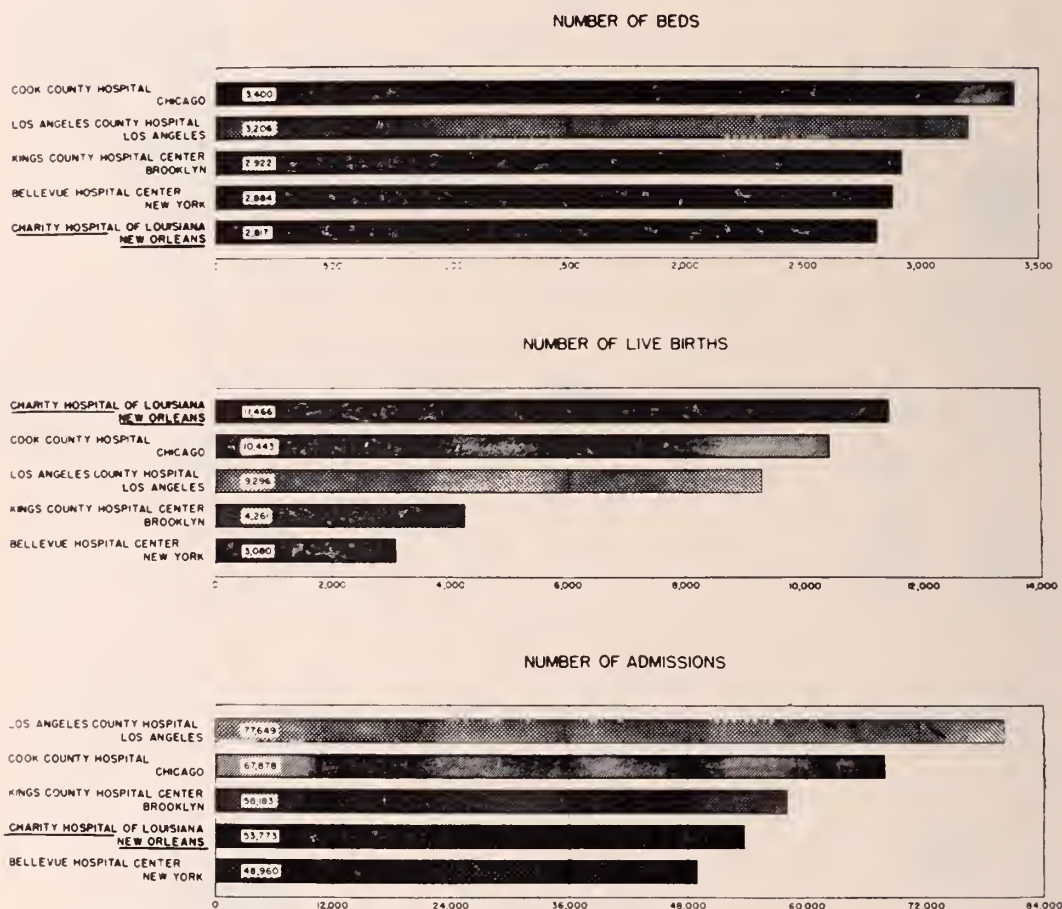


Figure 5

Southern States but stands a little below the national average.

The nation's five largest hospitals are compared graphically in Figure 5. Using the three indices shown, Charity Hospital at New Orleans ranks fifth, first, and fourth among these giant institutions. One of the reasons why New Orleans is among the leading medical centers of the United States is that the large numbers of patients of Charity Hospital comprise a reservoir of clinical medical material of great importance in medical teaching and research.

The last chart, Figure 6, shows number and proportion of all hospital beds in the state.

SUMMARY

Louisiana has a higher ratio of hospital beds per thousand persons of population than its neighboring Southern States, and it is about at the national average for hospital facilities. In 1953, there were 12,844 general, 9,527 mental, and 531 tuberculosis hospital beds in this state, a total of 22,902 beds of all types. The largest state hospital, Charity Hospital at New Orleans, ranks with the five largest in the United States in size.

HOSPITAL BEDS. BY TYPE.

LOUISIANA, 1953



TOTAL BEDS	22,902
GENERAL	12,844
NERVOUS & MENTAL	9,527
TUBERCULAR	531

Figure 6

REFERENCE

1. Hospital Service in the United States. The 1953 Census of Hospitals. J.A.M.A., May 15, 1954.

AN ACCOUNT OF THE EARLY HISTORY OF CESAREAN SECTION IN THE UNITED STATES *†

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While the operation of cesarean section is one of the oldest in the history of medicine, its origin is concealed under the dark cloak of antiquity. It has been called the most important operation since it is the only one in which two lives are involved. Few surgical procedures have been the subject of such bitter controversy throughout history. The very definition of the operation caused dispute among early authors, many of whom included in the term

cesarean the operations for the removal of the fetus from the abdominal cavity following rupture of the uterus, as well as that for abdominal pregnancy. R. P. Harris, of Philadelphia, the most prolific and productive early writer on the subject in America, wrote succinctly, in 1872, as follows: "I take the ground, that there is and can be but one operation truly 'Caesarean', and that is the ancient 'section', made through the abdominal and uterine walls for the purpose of removing the fetus, with the hope of saving the life of the mother, and if possible that of the child."

CESAREAN SECTION IN LOUISIANA

In the early accounts pertaining to cesarean section in this country one finds frequent mention of physicians of Louisiana. It seems fitting here to call attention to some of their contributions.

Harris was so impressed with the frequent and successful use of the operation in Louisiana that, in 1872, he wrote: "No State in the Union probably equals Louisiana in the number of Cesarean operations, their successful results, or the early period of their history. That the operation was performed a number of times with success in the early part of this century, prior to any of the cases I have here recorded, there is every reason to believe; in fact, it is highly probable that the Louisiana operations constitute a fifth of the whole credit of the Union".

Francis Prevost, of Donaldsonville, Louisiana, is credited by Williams, as being the first in this country to perform cesarean section twice upon the same individual; in fact he is said to have operated upon four occasions prior to 1830, losing but one of the mothers and none of the children. Williams also stated that J. A. Scudday, of Louisiana, operated successfully on the same patient in 1846 and 1849, saving the mother and both children.

Both Eastman and Young state that the first recorded instance in America of the use of uterine sutures in cesarean section was that reported by Warren Brickell, who was Professor of Obstetrics in the

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† Presented at a meeting of the New Orleans Gynecological and Obstetrical Society, March 12, 1957.

New Orleans School of Medicine. He advocated their use both in cesarean section and ruptured uterus in his lectures in 1856, but did not put his idea into practice until 1867 when he used silver wire sutures. The patient recovered.

In his paper on the contributions of frontier American surgeons to cesarean section, Eastman cited Harris' report which, in 1871, insisted that the operation to be safe must be done early in labor. Harris based his thesis on the excellent reports from rural areas where it was known that the operations were performed in early labor while the patients were still in good condition. Especially creditable were the statistics reported from the plantations of Louisiana where the mortality from among the slave women was 12.5 per cent; while, in contrast, 75 per cent of the mothers died who were delivered by cesarean section in the City of New Orleans, where the operations were performed after many hours of labor, as was the usual custom in urban areas the country over.

In more modern times, your own C. Jeff Miller was one of the persistent and powerful voices on the very necessary side of conservatism in the use of cesarean section. According to Findley, about 1930, Miller wrote, "It is one of the paradoxes and one of the tragedies of medicine that certain measures designed primarily as life-saving and health-giving should carry in their abuse death and invalidism. Cesarean section is of this group. Originated for the salvation of the child and then of the mother, all too frequently it has become a death-dealing agent for them both".

THE FIRST CESAREAN SECTION IN THE UNITED STATES

In the first century, Plutarch, the great Greek biographer and moralist, said, "So very difficult a matter it is to trace and find out the truth of anything by history". This statement by the ancient writer is especially pertinent to any attempt to determine to which American physician belongs the credit of performing the first cesarean section. Of ten authorities con-

sulted, six accord the honor to Jesse Bennett of Edom, Virginia, while four support John Lambert Richmond, of Newton, Ohio. From various sources we learn that Bennett, a country practitioner, was forced to operate upon his own wife. The consultant had tried forceps and had failed. Of the two choices, craniotomy or section, Mrs. Bennett chose the latter. The successful operation was performed on January 14, 1794; but it was not recorded for many years. On April 22, 1827, Richmond performed cesarean section upon a convulsive patient with a malformed vagina. The mother survived but the child died. This case was not reported until 1830. In the matter of chronology we are forced to conclude that Bennett deserves to be designated as the first physician in the United States to perform cesarean section. However, Richmond should share the credit since his case was the first recorded by a physician in this country.

Since Prevost, of your state, was credited with having performed four cesarean sections prior to 1830, it is possible that he may have antedated Bennett. However, this cannot be documented since Harris and S. M. Bemiss, of New Orleans, made a special search for the records of Prevost's cases to no avail.

THE FIRST USE OF UTERINE SUTURES IN THE UNITED STATES

According to Williams and Rucker, at Occuquan, in Fairfax County, Virginia, in June, 1828, an empirical physician performed a cesarean section and, for the first time in the United States and the second time in the history of the world, sutured the uterine incision. However, there is some question as to whether or not this operation was a true cesarean since some believe that, from the description, it was merely an operation for an old extra-uterine pregnancy. In any event, it is the first instance in this country in which sutures were used to close the uterus or the incision into an extra-uterine fetal sac.

Authorities seem to agree that Brickell's use of silver wire sutures to close the uterine incision following section, in 1867,

was the first recorded instance in America. Again, the luster of this "first" was somewhat dimmed when it was learned that Frank E. Polin, in Springfield, Kentucky, in December 1852, had successfully used silver wire sutures. Polin had 10 cases in which he used silver wires, saving five of the mothers; however, he did not record his series.

It is stated by Young, that J. Townsend, of New York, in 1867, used fine hemp as uterine sutures; and that T. A. Foster, of Maine, in 1870, employed silk for this purpose for the first time in the world.

Bennett is said to have used linen thread for the uterine sutures in his "first" cesarean. Adair stated that Curtin, in 1878, sutured the incised uterus with phenolized catgut—the first American operation in which animal material was used for sutures.

It is the opinion of Eastman that, "The conception and development of the silver wire suture in cesarean section was wholly an American achievement". Eastman further believed that the success of the early operations in this country in which uterine sutures were used, contributed significantly to the evolution of Sanger's hypothesis. In Sanger's monograph he acknowledged the work of his American predecessors, on the basis of whose statistics he demonstrated that the prognosis in cesarean section improved in relation to the number of uterine sutures used, particularly in those instances in which silver wire had been employed.

It was not until 1874, according to Young, that the peritoneum of the uterus was separately sutured. R. O. Engram, of Georgia, in performing cesarean section after craniotomy had failed, sutured the uterus with carbolized silk, using three deep sutures, three superficial, and four including only the peritoneum. The patient recovered. The case, however, was not reported until 1885. This is another example of a possible "first" having been lost by failure to report. Sanger's monograph appeared in 1882, and it is quite possible that Engram would have been

given credit for contributing to Sanger's "multiple-layer" closure of the uterine wound.

CESAREAN SECTION EARLY IN LABOR

Perhaps the most significant contribution of American physicians in the history of cesarean section was the observation that the nearer to the onset of labor the operation was performed, the better was the prognosis for the mother and the baby.

W. P. Dewees, in 1832, and G. S. Bedford, in 1855, pointed out that, in their opinion, the alarming mortality following cesarean section in Great Britain and in certain instances in this country was due to the fact that the operation was used only as a matter of last resort. Dewees said, "... procrastination is the cause of the evil". It was suggested, if the operation was indicated, that it should be performed early in labor before the patient became exhausted.

In 1871, Harris insisted that the operation in early labor was the greatest factor in reducing mortality. It was the sheer weight of his collected data and his compelling writings which convinced the profession of the wisdom of what Eastman has called the "timely" cesarean operation. Kelly stated that Harris was the most prominent medical statistician the country had known. His writings were widely read in Great Britain and in Europe, and consisted in the main of six statistical surveys on the subject of cesarean section in this country. His data demonstrated the astonishing difference in maternal mortality when the operation was performed in early labor. Collected writings of Harris and others in 1881, as shown by Eastman, revealed that the maternal mortality in general for cesarean section in this country was 50 per cent; if the operation was performed within the first twenty-four hours of labor, 20 per cent; and following the operations done at the onset of labor, it reached the unbelievable level of below 10 per cent.

MISCELLANEOUS CONTRIBUTIONS

Phillip Syng Physick, Professor of Sur-

gery at the University of Pennsylvania, in 1822, suggested an extraperitoneal approach to the lower uterine segment by separating the peritoneal sac from the vault of the bladder. According to Williams, he antedated Baudelocque who was said to have described the same operation in 1823. However, these suggestions were not followed, and it was not until 1870 that T. Gaillard Thomas, of New York, performed the operation not knowing that it had been proposed nearly fifty years previously.

Many of the early repeat sections were performed in this country. Mention has been made of Prevost's four cases prior to 1830. Robert Estep of Columbiana County, Ohio, operated on the same patient in 1833 and 1834, and these are the first cases in this country of which there are accurate records. William Gibson, of Philadelphia, performed successful operations in 1835 and 1837; while J. A. Scud-day, of Thibodaux, Louisiana, operated with success in 1846 and 1849 upon the same patient.

While Denman in Great Britain was among the first to cast doubt on the propriety of repeated craniotomies performed on the same patient with contracted pelvis, Meigs, of Philadelphia, in 1835, supported this view and was one of the first to act on it in his own country by advocating the cesarean operation in such instances.

Professor Porro, of Pavia, Italy, in 1876, first performed the operation which later bore his name. However, he was not the first to remove the gravid uterus in a living patient. In 1869, Horatio Storer, of Boston, did this as an emergency procedure because of uncontrollable hemorrhage encountered during a cesarean section on a patient with a fibrocystic tumor of the uterus. The patient had been in obstructed labor for three days, and she died about two days later. The fetus was macerated.

A controversy which has continued to this day, involved the employment of cesarean section in the treatment of placenta previa. Lawson Tait, of Birmingham,

England, first suggested this in 1890, but did not perform such an operation until 1898. According to Young, Hutson Ford, in 1892, was the first in America to suggest this use of the cesarean operation. Young further stated, "In 1893, the first successful Caesarean section for placenta previa was performed by an American surgeon, A. C. Bernays". Prior to Tait's successful case in 1898, section had been performed for placenta previa three times in the United States. As late as 1930, J. Whitridge Williams and J. M. H. Rowland, of Baltimore, professors of obstetrics at Johns Hopkins University School of Medicine, and the University of Maryland School of Medicine, respectively, differed in their views regarding the use of cesarean section in treating placenta previa. The former believed that the operation was rarely indicated, while the latter advocated its more frequent use.

Among the chief proponents of the lower uterine segment section in this country were A. C. Beck, and J. B. De Lee. Each contributed modifications of the operation in 1919 and 1925, respectively. Together, they popularized the operation. De Lee is credited with coining the descriptive term "Laparotrachelotomy", in 1922.

As the incidence of cesarean section increased after the turn of the century, important American obstetricians inveighed against its misuse. Together, they constituted the voice of necessary conservatism. J. Whitridge Williams spoke of the "Furor Operativus" of obstetricians and general surgeons. Such other outstanding men in our field as F. S. Newell, R. W. Holmes, C. Jeff Miller, F. S. Kellogg, and Palmer Findley, to mention only a few, spoke and wrote against the indiscriminate use of the operation then in vogue throughout the world.

It seems fitting to close this discussion with a prophecy by R. P. Harris who contributed so much to the history of cesarean section in this country by his statistical writings, and his advocacy of the so-called "timely" section. In 1881, he wrote: "My own belief is, that in time the Cesar-

ean operation will be much more frequently performed than it has been, and with much better results, and that craniotomy will correspondingly diminish in favor as an elective expedient."

REFERENCES

- Adair, F. L.: *Obstetrics and Gynecology*, Vol. 2:831, Lea and Febiger, Phila., 1940.
- Bard, Samuel: *A Compendium of the Theory and Practice of Midwifery*, 4th Ed., Collins and Co., New York, 1817.
- Dewees, William P.: *A Compendious System of Midwifery*, 5th Ed., Carey and Lea, Phila., 1832.
- Eastman, N. J.: The role of frontier America in the development of cesarean section, *Am. J. Oh. Gynec.*, 24: 919, 1932.
- Findley, Palmer: *The Story of Childbirth*, Doubleday, Doran, Co., Inc., New York, 1934.
- Garrison, F. H.: *History of Medicine*, Ed. 4, W. B. Saunders Co., Phila., 1929.
- Graham, Harvey: *Eternal Eve, The History of Gynaecology and Ohstetrics*, Doubleday and Co., Inc., New York, 1951.
- Gutmacher, A. F.: *Into This Universe*, Viking Press, New York, 1937.
- Harris, R. P.: Lessons from a study of the cesarean operation in the city and State of New York, and their bearing upon the true position of gastro-elytrotomy, *Am. Jour. Obst.*, 12:82, 1879.
- Harris, R. P.: Special statistics of the cesarean operation in the United States, showing the successes and failures in each State, *Am. Jour. Obst.*, 14:341, 1881.
- Harris, R. P.: The cesarean operation in the United States, *Am. Jour. Obst.*, 4:409, 1871; 4:622, 1872.
- Heaton, Claude E.: *Obstetrics in Colonial America*, Ciba Symposia, 1:392, 1940.
- Kelly, E. C.: *Encyclopedia of Medical Sources*, The Williams and Wilkins Co., Baltimore, 1948.
- Kelley, H. A., and Burrage, W. L.: *Dictionary of American Medical Biography*, P. 533, D. Appleton and Co., New York, 1928.
- Kerr, J. M. M., Johnstone, R. W., and Phillips, M. H.: *Historical Review of British Ohstetrics and Gynaecology 1800-1950*, P. 32, E. & L. Livingstone, Ltd., Edinburgh, 1954.
- Meigs, Chas. D.: *Obstetrics: The Science and the Art*, 2nd Ed., P. 563, Blanchard and Lea, Phila., 1852.
- Robinson, V.: *The Story of Medicine*, P. 496, Tudor Publishing Co., New York, 1931.
- Rucker, M. P.: Editorial, *Virginia Medical Monthly*, 79:111, 1952.
- Williams, J. Whitridge: *A Sketch of the History of Ohstetrics in the United States Up To 1860*. (Published originally in Professor Dohrn's, *Geschichte Der Gehürtshulfe Der Neuzeit*—, Von Eduard Von Siebold; Tübingen, 1903).
- Young, J. H.: *The History of Caesarean Section*, H. K. Lewis & Co., Ltd., London, 1944.

MANAGEMENT OF CONSTIPATION DURING PREGNANCY

USE OF DIOCTYL SODIUM SULFOSUCCINATE IN 28 PATIENTS

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NEW ORLEANS

Constipation is a frequent complaint during pregnancy. If the condition is a result of the pregnancy itself, it usually can be successfully managed by proper control of diet, fluid intake, and exercise. Therapeutic measures are rarely required.

On the other hand, a number of patients give a history of some degree of chronic constipation prior to their pregnancy. In these the condition is apt to become more severe as pregnancy proceeds, and management is more difficult. Constipation is particularly severe during the third trimester when compression of the colon due to pressure in the abdominal cavity is probably a factor in causing atonicity.^{2, 9}

In the latter situation, therapeutic measures are frequently necessary even though they may not be desirable. Administration of mineral oil during the period of time required may interfere with vitamin absorption during a most undesirable time. Laxatives are usually not advisable because of the congestion which they may produce in the pelvic region and because their effect is only temporary. Such mild cathartics as cascara or milk of magnesia have been most widely used⁷ but any agent that would promote bowel movement without laxation would offer real and significant advantages.

The recent introduction of dioctyl sodium sulfosuccinate‡ as a fecal softening agent^{3, 10} led us to investigate its use in the constipation of pregnancy. The action of this agent is confined to a reduction of surface tension in the intestinal tract, and it presents none of the disadvantages of

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‡ Dioctyl sodium sulfosuccinate was supplied as doxinate by Lloyd Brothers, Inc., Cincinnati, Ohio, in the form of 60 mg. soft gelatin capsules.

the traditional agents used in the management of constipation.

MATERIAL

Twenty-eight pregnant patients complaining of a significant degree of constipation were treated with doxinate (R). All were outpatients seen at the Clinic during a period of six months during 1956. Constipation was characterized by passage of abnormally hard stools and infrequent bowel movements varying from once every other day to once or twice a week.

Twelve of the 28 patients had chronic functional constipation requiring frequent use of laxatives, enemas, or suppositories. In 14 patients the condition was less severe with a history of fairly frequent episodes of constipation. In only 2 instances could the disorder be attributed directly to the pregnancy itself. No major gastrointestinal disease was apparent in any of these patients although fibroids were present in one patient and hemorrhoids in another. Over half (54 per cent) of the patients required medication at rather frequent intervals to obtain bowel movement.

Most of these patients were under our care for a period of time sufficient to attempt correction of their constipation by physiologic measures. Dietary modification, increased fluid intake, and regulated exercise were uniformly unsuccessful. Therapeutic measures were therefore used as an adjunct.

All patients received a daily dose of 180 mg. of doxinate (R) (one 60 mg. capsule after each meal) for an initial period. Dosage was subsequently increased or decreased as needed.

RESULTS

Treatment with doxinate (R) was initiated at different times in individual patients with respect to their pregnancy. Approximately equal numbers of the group received the drug for the first time during each trimester. Results showed that the time of initial treatment had little bearing on the results obtained, although it was observed that patients some-

times required an increased dosage during the third trimester.

This regimen of treatment was satisfactory in 21 of the 28 patients (75 per cent). Two patients were able to discontinue the routine use of doxinate (R), using it for a few days only when irregularity or hard stools became noticeable. Constipation was satisfactorily controlled in one patient with a dosage of only 60 mg. daily. One patient found it necessary to take 360 mg. (six capsules) daily during the final trimester to obtain a continued satisfactory response.

As would be expected, the response was poorer among patients with pre-existing chronic functional constipation who had previously relied upon cathartics and enemas. Five of the 12 patients falling in this category responded satisfactorily to a daily dosage of 180 mg. of doxinate (R), 5 required 360 mg., and 1 required 540 mg. One patient did not respond favorably to this medication.

Three patients continued to take doxinate (R) during the puerperium with good results, and the impression was gained that normal bowel activity was restored more satisfactorily in them than in those having conventional treatment.

Friedman,⁴ Marks⁶ and Antos¹ have pointed out that the use of a mild peristaltic stimulant as an adjunct to doxinate (R) therapy in patients with chronic functional constipation is advantageous. Some of these patients might well have received additional benefit if such combination treatment had been used on a withdrawal basis. However, the primary purpose of this investigation was to evaluate the effect of doxinate (R) as a possible means of avoiding laxation entirely. Accordingly, laxative measures were not used.

In patients benefitted by doxinate (R) bowel regularity usually was obtained within two weeks. Softening of the stools occurred in every patient although actual bowel movement did not always result. Nevertheless, 24 of the 28 patients (86 per cent) eventually experienced regular

bowel movements, usually of daily frequency.

In the patient with hemorrhoids the softened fecal mass resulted in less painful defecation. The frequency of anorectal complications in pregnant women^{5, 8} suggests an advantage in the use of doxinate (R) in such patients.

In general, patients commented favorably on the convenience of administration of doxinate (R). The capsule is small and easily taken and is much more acceptable than large doses of liquid medicaments.

SUMMARY AND CONCLUSIONS

1. Dioctyl sodium sulfosuccinate (doxinate (R)), when used in conjunction with a proper physiologic regimen, was effective in relieving chronic functional constipation in 24 of 28 pregnant women.

2. A daily dosage of 180 mg. of doxinate (R) was effective in 75 per cent of the patients treated. These included cases of pre-existing chronic functional constipation and others in which the condition became progressively worse during pregnancy.

3. Doxinate (R) effectively softened the stools of all patients. It is a valuable adjunct in the management of constipation during pregnancy, offering advantages over traditional methods.

4. Neither side effects nor toxic symptoms were observed when this agent was administered.

REFERENCES

1. Antos, R. J.: A new approach to the treatment of severe constipation, *Southwestern Med.* 37:236, 1956.
2. Beck, A. C. and Rosenthal, A. H.: *Obstetrical Practice*, ed. 6, Baltimore, Williams & Wilkins Company, 1955, p. 223.
3. Cass, L. J. and Frederik, W. S.: Doxinate in the treatment of constipation, *Am. J. Gastroenterol.* 26:691, 1956.
4. Friedman, M.: Dioctyl sodium sulfosuccinate (Doxinate) in chronic functional constipation, *Am. Pract. & Digest. Treat.* 7:1588, 1956.
5. Gerwig, W. H., Jr.: Anorectal complications of pregnancy, *Am. Surgeon* 22:549, 1956.
6. Marks, M. M.: Treatment of constipation with a new evacuant, *Clin. Med.* 4:151, 1957.
7. Mark, M. M. and Thiele, G. H.: Management of proctologic disease in pregnant and parous women, *Am. J. Surg.* 90:826, 1955.
8. Pope, C. E.: Anorectal complications of pregnancy, *Am. J. Surg.* 84:579, 1952.
9. Titus, P. and Willson, J. R.: *The Management of Obstetric Difficulties*, ed. 5, St. Louis, C. V. Mosby Company, 1955, p. 108.
10. Wilson, J. L. and Dickinson, D. G.: Use of dioctyl sodium sulfosuccinate (Aerosol O.T.) for severe constipation, *J.A.M.A.* 158:261, 1955.

DEVELOPMENT OF A RADIOISOTOPE TRACER TEST FOR THE DIFFERENTIAL DIAGNOSIS OF JAUNDICE

(THE ROSE BENGAL I¹³¹ HEPATOGRAM)*†

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(With the technical assistance of William J. Coffman, Barbara Maurer and Ethel Plummer)

INTRODUCTION

This paper is presented to describe recent progress in the development of an external tracer test (the Rose Bengal I¹³¹ Hepatogram) for the direct measurement of liver vascularity, hepatic cell function, and bile flow interference. Our initial studies in 1954-55^{1, 2} indicated that the I¹³¹-labeled Rose Bengal test had several advantages over indirect biochemical methods for evaluating liver cell damage. For example, the test may be performed repeatedly in patients with severe jaundice because of the minute doses of dye and radioactivity employed. Rose Bengal is handled specifically by the polygonal cells of the liver and not by the von Kupffer's cells.^{1, 3} It is not reabsorbed from the intestines¹ and no reactions from tracer doses have been encountered in our experience^{1, 2, 4} or that of others.⁴⁻⁸

In normal rabbits^{1, 2, 4} and in human subjects the test has given reproducible results.¹⁻⁸ The liver uptake-excretion patterns from patients with acute hepatitis were distinctly different from normal during active phases and returned to normal patterns at the time of recovery.^{1, 2, 4-8} Patients with advanced cirrhosis have

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shown grossly impaired liver uptake and excretion rates as well as distinctly diminished liver vascularity.^{1, 2, 4} Test results in animals and man both have correlated well with the pathologic findings and also with the results of various biochemical liver tests.¹

Liver uptake-excretion tracings from animals with surgically ligated common bile ducts indicated that acute complete biliary tract obstruction in man could be detected rapidly.^{1, 2, 4} However, in clinical practice *acute complete* bile duct obstruction is a rarity. Most lesions interfering with the flow of bile cause either a gradually increasing degree of partial obstruction or an intermittent disturbance.⁹⁻¹² Tumors of the head of the pancreas and of the ampulla of Vater or stricture of the sphincter of Oddi are examples of lesions which frequently cause gradually increasing obstruction.^{11, 12} Inflammatory lesions of the biliary canaliculi are known to produce acute obstructive jaundice.¹³⁻¹⁶ Such lesions are probably caused by sensitization reactions following the administration of three main drugs—thorazine, methyl testosterone and arsphenamine^{17, 18}—or by ascending bacterial infections. Thorazine jaundice has been confused with other types of obstructive jaundice previously described and several patients have been inadvertently treated surgically.¹⁶ Fortunately, in most cases of thorazine reactions jaundice is transitory and biliary obstruction is incomplete.¹³⁻¹⁶ However, in the rare severe forms there are periods during the course of the disease in which almost total obstruction may exist for several days.

The purpose of this paper is to demonstrate the usefulness of the Rose Bengal I¹³¹ Hepatogram as an aid in distinguishing between polygonal cell injury and bile flow interference, particularly in patients in whom there is a problem in deciding between continued medical management and surgical intervention.

Recent laboratory studies in rabbits are presented to demonstrate the effects of biliary obstruction on polygonal cell func-

tion, the influence of agents causing liver stress on sensitizing the Rose Bengal Hepatogram, and the alteration of bile flow rates by drugs acting on the liver capillaries and hepatic cells. Recent clinical work has included the development of a modified test procedure designed to provide the information needed to distinguish between medical and surgical jaundice. Results in patients with total obstruction demonstrate its immediate differential diagnostic value. Its usefulness in evaluating liver injury and bile flow interference in patients with partial or intermittent biliary obstruction is presented. Repeated Rose Bengal I¹³¹ Hepatograms in such patients may reveal the pathophysiologic nature of the primary lesion more quickly than indirect biochemical liver tests.

MATERIAL AND EQUIPMENT

A. Radioactive Rose Bengal: The Rose Bengal used (C.I. 779) is made radioactive by a procedure utilizing ion exchange reactions, giving a dye with high specific activity, that is, about 1 mc. per mg. The Rose Bengal I¹³¹ is supplied commercially* in a sterile solution containing 10 mg. of dye and about 10 mc. of I¹³¹ per ml. Samples used for test purposes are prepared to contain 5 microcurie per ml. by making suitable dilutions of the stock dye solution in normal saline.

B. Gamma-ray Counting and Recording Equipment: Gamma-ray activity is measured using a lead collimated scintillation counter (1 to 1½ inch sodium iodide crystal) connected through a combination rate-meter-scaler to an Esterline-Angus recorder (Fig. 1).

PRINCIPLES AND TECHNIQUES FOR PERFORMING RADIOACTIVE ROSE BENGAL I¹³¹ LIVER FUNCTION TESTS

A. Principles:

1. *Physical:* The physical principles are based on the phenomenon that each gamma ray emitted by an atom of I¹³¹ absorbed by the sodium iodide crystal within the detector causes a flicker of light. This light impulse is converted to an electrical

* Radioisotope Division of Abbott Laboratories, Oak Ridge, Tennessee.



Figure 1

pulse within the photomultiplier tube and passes through several stages of amplification. The ratemeter measures the overall charge built up by the series of pulses which is proportional to the rate of gamma-ray emission. The levels of radioactivity following injection are recorded against time, showing the rates of accumulation and excretion of radioisotope in the organ. External measurements of blood clearance rates of I^{131} -labeled Rose Bengal reflect with sufficient accuracy the actual clearance values ordinarily obtained by blood-sampling techniques.⁴

2. *Physiological*: Following intravenous injection, Rose Bengal, a fluorescein derivative dye, is selectively absorbed by the polygonal cells of the liver³ and excreted with the bile into the intestine, similarly to bromsulphalein. Substitution of gamma ray-emitting iodine I^{131} for the non-radioactive iodine atoms present in this dye permits *external* measurement of its

uptake by the liver and excretion through the biliary tract, using gamma-ray scintillation detectors. Similar external blood clearance measurements made over the head, chest, or thigh give further data on liver function, indirectly.¹⁹

B. *Test Procedures*:

1. Originally, liver uptake and biliary excretion rates were measured by placing a lead-shielded scintillation counter over the upper anterior portion of the liver with the sensitive element (sodium iodide crystal) retracted 6" into the lead shield to provide collimation.¹ The patient remained in a reclining position for the duration of the test (sixty to ninety minutes). The dose of dye varied between 0.2 and 5.0 mg., but the amount of radioactivity was held constant at 5 microcuries. The test dose (from 2-5 ml.) was injected intravenously at the rate of approximately 0.1 ml. per sec. The changing levels of radioactivity over the liver area were

transmitted from the counter through the ratemeter and registered on an Esterline-Angus recorder, giving a permanent record of the liver uptake-excretion pattern.

2. The abbreviated technique employed originally² to evaluate liver function was performed in a similar manner except that the rates of Rose Bengal liver uptake were recorded for only twelve to fifteen minutes during the almost linear phase, when negligible amounts of dye are being excreted. With the use of radioiodinated serum albumin (RISA) it was demonstrated that the initial leg of the Rose Bengal liver uptake curve provided an index of total liver vascular capacity. It was found that there is an extremely rapid rise in radioactivity in the liver, reaching a peak level in thirty to ninety seconds, followed by a slow steady rise for the next ten to fifteen minutes. By injecting RISA and recording similar measurements over the liver there is an identical rapid liver uptake for the first thirty to ninety seconds followed by a plateau level which remains constant for more than an hour. Since albumin remains in the circulation and is not specifically removed by the liver cells, as is the case with Rose Bengal, the height of the *initial* liver uptake segment of both curves appears to represent the amount of radioactivity in liver blood; hence it is evident that the first and second segments of the Rose Bengal liver uptake curves provide indices of total liver blood supply or vascular capacity, as well as of polygonal cell function.

Extensive studies in animals⁴ have shown that the rates of liver uptake and blood clearance have a reciprocal relationship and the curves of uptake versus blood clearance are nearly mirror images. Recent investigations in patients as well as in rabbits have demonstrated that the rates of liver uptake-excretion, blood clearance and increases in the levels of upper intestinal radioactivity can be measured externally with a single scintillation counter.

3. The new clinical test procedure employs the same equipment used for stan-

dard I¹³¹ thyroid diagnosis, that is, a collimated scintillation detector and a combination ratemeter-scaler, which may be connected to an Esterline-Angus recorder if so desired. The patient is placed in a reclining position and the exact areas to be counted are marked over the liver, the midabdomen and the thigh or head. To obtain data from which liver uptake-excretion and blood clearance curves may be plotted, the patient is given an intravenous injection (1 microcurie per 15 kg.) of the Rose Bengal I¹³¹, and counts are made initially over the liver for one minute beginning thirty seconds after the injection. The counter is shifted to the thigh and then to the mid-abdomen and similar one-minute counts are made. These three measurements are repeated as frequently as possible during the next thirty to forty-five minutes. Additional counts are made over the same areas for longer periods if the maximum liver level is not reached during this time. The patient is requested to return for repetition of the same three measurements at two to four hours and again in approximately twenty-four hours. When these data are corrected for background radioactivity, plots may be prepared which show the rates of blood clearance, liver uptake-excretion and delivery of dye to the upper intestinal tract (the Rose Bengal I¹³¹ Hepatogram).

C. Results of Animal Studies:

1. *Common Bile Duct Obstruction*: Forty-two normal rabbits were tested with the Rose Bengal I¹³¹ liver uptake-excretion blood clearance procedures using continuous recording techniques and duplicate equipment similar to that employed clinically. These animals were then placed in metabolism cages to measure urinary and fecal excretion of Rose Bengal for seventy-two hours. At twenty-four hours, external counts of radioactivity were made over their livers and mid-abdomens.

One week later groups of these controls were operated and their common bile ducts were ligated. Animals with common duct obstruction were then studied in the same manner as during the control period to

determine the effects of bile duct ligation on polygonal cell function and on urinary and fecal excretion of Rose Bengal. Data presented in Table I show that ligation of the common bile duct causes a rapid de-

an immediate two- to three-fold reduction in rate, whereas decholin increases the bile flow temporarily by factors of five- to ten-fold. Additional studies of this type to determine whether external liver measurements of radioactive Rose Bengal correlated with bile flow showed a parallel relationship between the externally detected radioactivity and that measured in bile samples.⁴ Furthermore, the injection of decholin causes a sharp increase in bile flow, as indicated by an abrupt change in the slope of the external excretion curve which coincides with a rapid increase in the rate of bile flow seen visibly from the biliary cannula. In similar experiments this increase in bile flow rate by decholin could be accentuated by previous administration of epinephrine.¹⁹ These laboratory findings suggest that a clinical test could be developed to indicate the patency of the upper biliary passages. It could be useful in studying patients with partial obstruction from acute biliary canaliculitis or cholangiolitis.

3. *Stress Testing*: It is generally recognized that indirect biochemical liver tests are relatively insensitive.^{9, 20} Also, test procedures which do not place a load on the liver may fail to detect functional impairment because of the tremendous reserve capacity of the liver and its ability to regenerate rapidly.^{21, 22} Therefore various physiological agents were injected prior to and in conjunction with Rose Bengal I¹³¹ testing. The material which has been shown to provide a practical method for stressing the polygonal cells is bromsulphalein. When this dye is injected five to forty-five minutes prior to Rose Bengal it requires doses up to 20 times the standard dose of 5 mg. per kg. before there is any alteration in the dynamics of Rose Bengal liver uptake-excretion. However, when 10 mg. doses per kilo. of bromsulphalein are mixed with tracer doses of Rose Bengal and given simultaneously, the dynamics of Rose Bengal liver uptake and blood clearance are altered only slightly (10 to 20 per cent) in normal animals (Fig. 2), but in animals recovering from carbon tetra-

TABLE 1
ROSE BENGAL I¹³¹ BILIARY OBSTRUCTION STUDIES
IN RABBITS

DAYS POST	ANIMAL NUMBER	LIVER VASC. c/m./min.	LIVER MAX. c/m./min.	LIVER VASC. c/m./min.	LT. %	LT. %	LIVER AND LUT. 24 Hours	% RS EXCRETION 24 Hours URINE	% RS EXCRETION 24 Hours FECES
0	4.2 CONTROLS	686 (575-800)	1574 (1235-1890)	21 (15-30)	30 (17-37)	20 (0.1-0.48)	0.27 (0.4-2.6)	12 (10-47)	31
1	17	715	1425	2.0	62	4.2	0.5	0.9	0.5
1	19	428	428	1.0	∞	∞	2.4	1.0	5.5
2	35	585	1050	1.8	∞	∞	11	—	—
2	36	900	1460	1.2	∞	∞	12	2.8	0.3
2	58	865	940	11	∞	∞	0.8	4.5	0.0
2	47	774	845	11	∞	∞	5.4	0.4	0.4
2	48	587	700	1.8	64	4.5	0.8	0.1	0.5
5	2	572	750	15	210	140	0.9	15	24
5	5	606	767	15	45	2.9	10	11	2.2
5	57	810	1120	12	∞	∞	1.4	14.1	0.1
5	40	742	881	15	∞	∞	—	—	—
5	42	810	854	10	280	193	1.4	10	1.8

terioration of liver function, as indicated by reductions in the rates of liver uptake and by decreases in the ratios of maximum liver uptake to vascularity level. It is apparent from the table that a few of the animals had incomplete biliary obstruction, which is evident from the near normal liver excretion rates and from the amounts of radioactivity found in fecal specimens. At necropsy these animals were found to have either incomplete ligation with bile leakage or rupture of the gallbladder with localized chemical peritonitis and little liver injury. These experiments also showed that common duct ligation has a tendency to increase the small amount (1 to 2 per cent) of Rose Bengal normally excreted in the urine; however, the findings were so variable that it is unlikely that measurement of urinary excretion of Rose Bengal in patients with obstructive jaundice would provide data of diagnostic value.

2. *Bile Flow Rate Studies*: The rate of bile flow measured in normal animals by cannulation of the common bile duct was found to be relatively constant (0.05 ml. per min.) over periods of sixty to one hundred and eighty minutes. The influence of various drugs was tested simply by observing any alteration in the dropwise rate of bile flow. Epinephrine causes

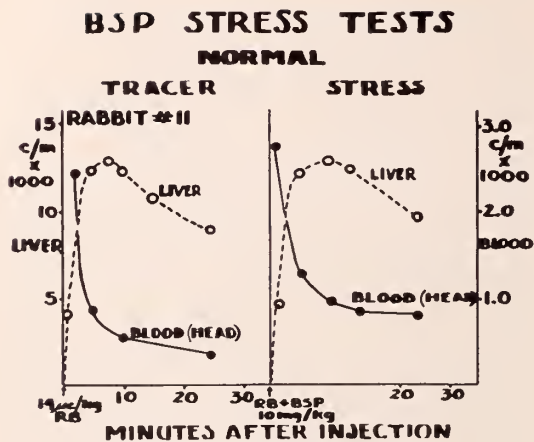


Figure 2

chloride poisoning this stress test is definitely positive (Fig. 3) when the tracer

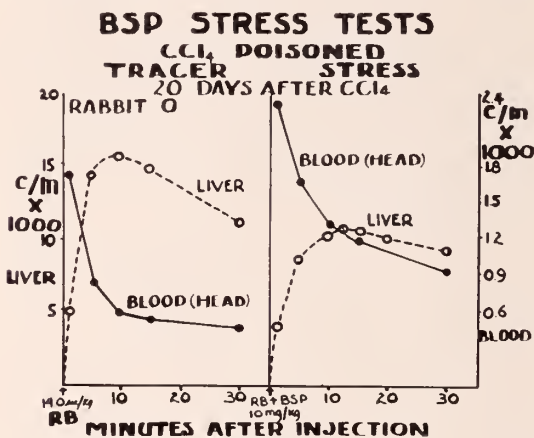


Figure 3

test has returned to normal. The BSP-RB I¹³¹ stress test should have direct clinical application and also permit exact comparison of the relative sensitivity of the two dye methods in the same animal or patient simultaneously. Preliminary results indicate that this procedure should significantly increase the sensitivity of the Rose Bengal I¹³¹ test in measuring polygonal cell injury of the liver.

D. Comparative Dynamics in Man Versus Rabbits: The information presented in Fig. 4 shows that the *average* liver uptake-excretion rates in 100 normal rabbits and 50 healthy human subjects are nearly identical except for timing. The liver uptake and blood clearance are about five times faster in rabbits than in man and

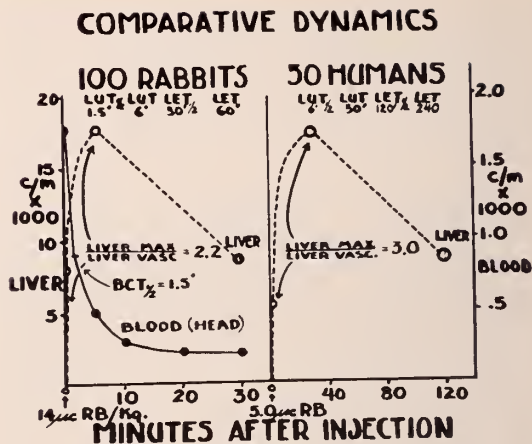


Figure 4

the average excretion rate is four times faster. These temporal relationships render it possible to predict from controlled rabbit studies the disturbed physiology to be found in man.

E. Clinical Results: In all 50 of these normal healthy subjects standard biochemical liver tests have been almost entirely negative. An example of the normal relationships including blood clearance and the rate of delivery of Rose Bengal to the upper bowel is shown in Fig. 5. It is seen

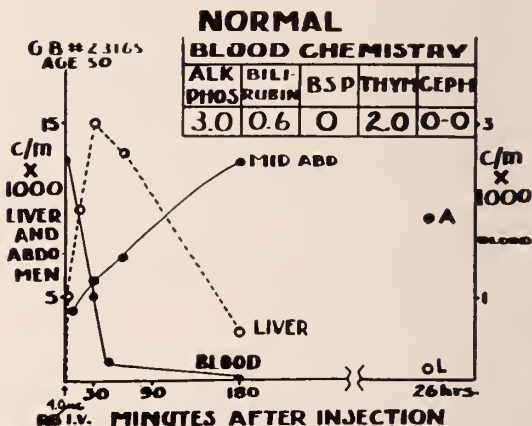


Figure 5

that the initial rise of activity over the liver (liver vascularity) is about 1200 counts per minute per microcurie of Rose Bengal administered, and that the subsequent rise of radioactivity in the liver reaches a maximum in approximately thirty minutes and then diminishes at a slower rate, reaching about 70 per cent clearance in three hours. The blood clear-

ance curve is practically a mirror image of the liver uptake curve. The blood is largely cleared by the time maximum liver uptake is achieved. From readings made over the mid-abdomen it is seen that Rose Bengal is being secreted with the bile into the upper intestinal area during the first thirty minutes and then excretion proceeds during the next two and a half hours at a rate similar to that of the decline in liver radioactivity.

1. *Acute Hepatitis*: In acute hepatitis the rate of liver uptake is grossly depressed during the acute phase of the disease and returns to normal over a period of weeks, as is shown in Fig. 6. Blood chemistry data presented in the same figure show the parallel relationship between the abbreviated Rose Bengal liver uptake test results and values from standard indirect biochemical liver tests.

2. *Chronic Hepatitis*: In chronic hepatitis the dynamics of liver uptake-excretion and blood clearance are also grossly depressed, and the biochemical liver tests

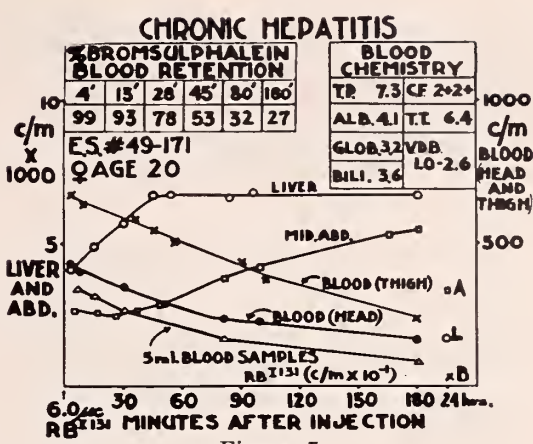


Figure 7

ues obtained from counting blood samples and continuously recorded radioactivity levels over the head and satisfactory correlation with repeated thigh counts. A 0.5 mm. lead shield was employed in the probe used for continuous head counting, to reduce low-energy scattered radiations. The blood retention of BSP given simultaneously was 53 per cent at forty-five minutes and 27 per cent at three hours.

3. *Complete Obstruction*: In patients with complete biliary obstruction from cancer of the head of the pancreas there is an associated liver cell impairment as indicated by the slow rates of liver uptake and blood clearance. Complete obstruction is demonstrated by total retention of dye in the liver at twenty-four hours and by no increase in abdominal radioactivity during the same time (Fig. 8).

4. *Complete Versus Partial Obstruction*: The differences between complete

ACUTE HEPATITIS

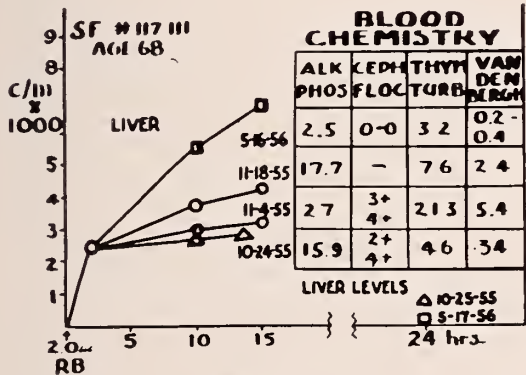


Figure 6

show impairment of several functions (Fig. 7). In this patient, blood clearance of Rose Bengal I¹³¹ was measured by three methods simultaneously: (1) by continuous external recording of radioactivity counted over the top of the head, (2) by repeated external counts made over the thigh, and (3) by analyzing serial blood samples in a well scintillation counter. There is excellent agreement between val-

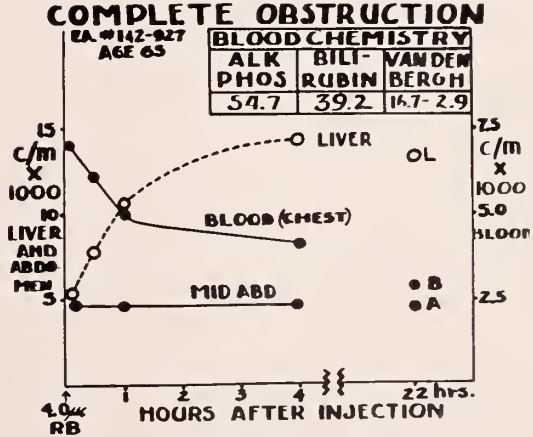


Figure 8

and partial biliary obstruction in respect to liver uptake-excretion curves alone are shown in Fig. 9. In cases of partial ob-

COMPLETE VS. PARTIAL BILIARY OBSTRUCTION

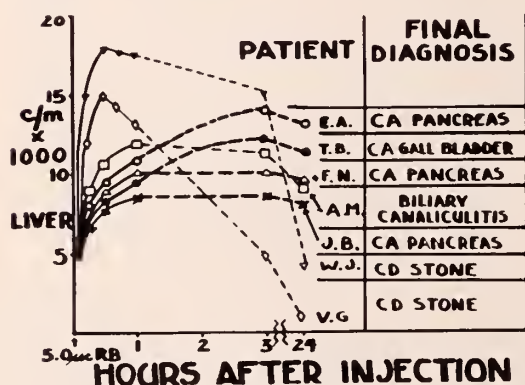


Figure 9

struction there are significant decreases in liver activity by three hours as compared with their maximum uptake values and extremely sharp reductions between the three and twenty-four hour liver levels. Furthermore, it is seen from these data that in partial obstruction cases the initial liver uptake rates are within relatively normal limits, whereas in patients with long-term high-level biliary obstruction there is an associated gross impairment of liver cell function, as manifested by marked reductions in rates of Rose Bengal liver uptake. Patient A. M. is an example of severe jaundice from intrahepatic biliary obstruction. He was treated surgically and explored for common duct stones. None were found at operation and the gallbladder, pancreas, and ampulla all appeared normal. Liver biopsy showed changes in the biliary canaliculi and around the central lobular areas similar to those found in obstructive jaundice from thorazine or methyl testosterone. His single Hepatogram showed moderate parenchymal damage and high-level biliary obstruction which was not quite complete.

5. Case Report of a Typical Diagnostic Problem: The problem of differentiating parenchymal liver cell disease from biliary tract obstruction is a difficult one because there is nearly always secondary polygonal

cell injury in such cases. Biochemical tests for polygonal cell disease may be positive, as well as those which indicate biliary obstruction. Hepatograms presented in Figs. 10 to 13 were obtained from one individual wherein such a diagnostic problem existed. The patient (a 28-year-old woman) had been operated for chronic cholelithiasis and acute common duct obstruction from stone three months before the present admission. Data in Fig. 10

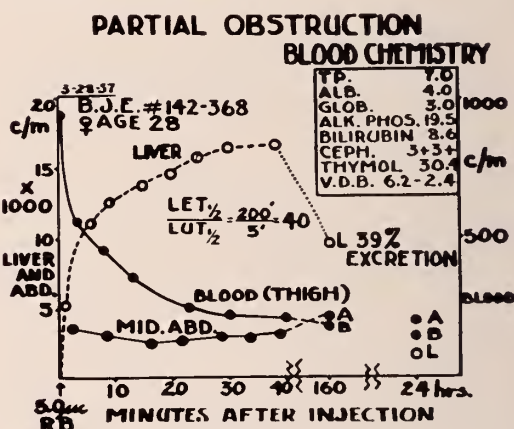


Figure 10

were obtained three days after the second admission. The patient had had signs and symptoms of an obstructive type of jaundice for three days prior to this admission. She had a sudden recurrence of right upper quadrant pain, nausea, vomiting, chills and fever, increasing jaundice, dark-colored urine and light-colored stools. The dynamics of her first Rose Bengal I¹³¹ liver uptake-excretion curves (Fig. 10) indicated partial biliary obstruction but relatively little impairment of liver function. Blood chemistry showed a high serum bilirubin, a moderately elevated alkaline phosphatase, and positive tests for polygonal cell damage, as well as a positive direct-acting van den Bergh's reaction. Four days later the Rose Bengal I¹³¹ Hepatogram was repeated (Fig. 11), at which time the patient was comfortable and less jaundiced and the Hepatogram showed a striking improvement in biliary excretion when comparison was made with the first test. However, there was a rise in alkaline phosphatase, along with a fall in serum bilirubin. A third Hepatogram was per-

PARTIAL OBSTRUCTION-RECEDING

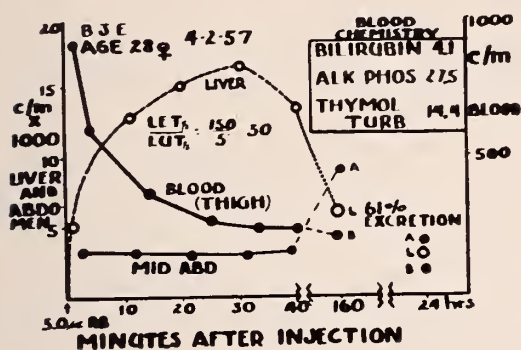


Figure 11

PARTIAL OBSTRUCTION-RECOVERED

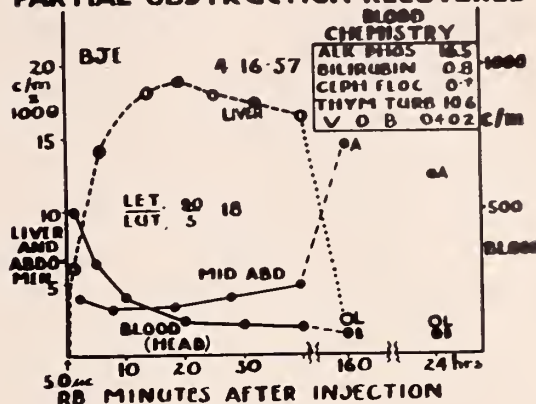


Figure 13

formed one week later (Fig. 12), at which time the dynamics had returned to entirely normal limits. However, the alkaline phosphatase showed a further increase. Clinically the patient was greatly improved, only mildly jaundiced, and had no significant abdominal complaints. Other biochemical liver tests showed improvement but remained definitely positive. A

PARTIAL OBSTRUCTION-RECEDING

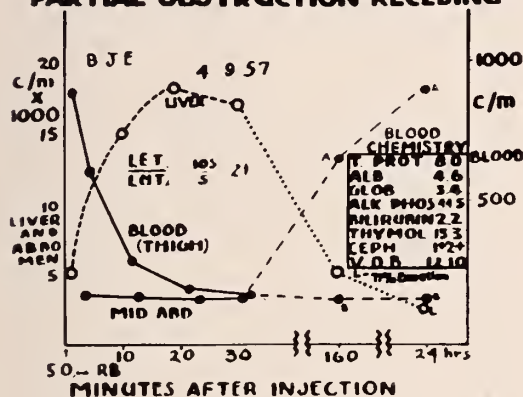


Figure 12

fourth Hepatogram was performed one week later (Fig. 13) and the findings again were entirely within normal limits and the patient had remained asymptomatic. Biochemical liver tests showed a further return towards normal values; however, the alkaline phosphatase remained somewhat elevated.

The differential diagnostic problem involved consideration of homologous serum jaundice because the patient had received blood transfusions during her recent operation three months previously; acute in-

fectious hepatitis, because of her age; thorazine jaundice, because she was receiving psychiatric treatment, and a recurrence of her biliary tract disease on the possibility that all stones had not been removed at cholecystectomy and common duct exploration. The repeated Rose Bengal tests provided direct evidence in this case which indicated that neither homologous serum jaundice nor acute hepatitis was a likely cause because of the rapid changes in test results (days). In both of these primary liver diseases improvement in function occurs much more slowly (weeks). Results in this patient demonstrate the value of serial Hepatograms as an aid in distinguishing between primary liver cell injury and bile flow interference. In this individual it was apparent during the second Hepatogram that the most likely cause of her disease was a recurrent attack of common duct obstruction, from passing a stone. Furthermore, the repeated Hepatograms gave immediate information which was proved to be correct fourteen days later by standard indirect biochemical liver tests. The probable reason for the relatively slow response of biochemical tests is that these procedures give indirect indications of functional disorders within the liver and considerable time is required for readjustment to new equilibrium states.

DISCUSSION

In the differential diagnosis of medical versus surgical jaundice laboratory findings must be considered only as aids to

the clinical evaluation of the problem.^{9, 14, 21} An accurate diagnosis may be made in the majority of patients without the use of laboratory tests. However, when clinical clues are either insufficient or give conflicting information, such cases present difficult diagnostic problems. Rapidly increasing painless jaundice in a patient having laboratory evidence of liver cell damage plus biliary obstruction is an example of a situation with which the physician is often confronted. Under such circumstances it is often necessary to decide between continued medical treatment and immediate operative procedures.¹⁰⁻¹² If the lesion is producing high-level biliary obstruction there is likely to be rapid deterioration of liver cell function. Each day of delay increases the operative risk and reduces the chances of recovery. On the other hand, if the lesion is either a widespread virus infection of the hepatic cells and/or intrahepatic inflammation of the fine bile passages, surgical procedures are detrimental and medical management is mandatory.^{9, 13}

The data presented in this paper have shown that serial Rose Bengal I¹³¹ Hepatograms may provide direct physiological evidence concerning the degree of bile flow interference as well as the relative amount of secondary liver cell injury in patients with partially obstructive jaundice. A gradually increasing degree of obstruction associated with slowly decreasing liver function over a period of several weeks is evidence favoring extrahepatic obstruction from cancer of the head of the pancreas, common bile duct stenosis or tumor of the ampulla of Vater.^{9-12, 21, 22} Rapid changes in biliary patency occurring within a few days associated with only slight impairment of liver function favor the presence of ball valve common duct stone lodged near the ampulla.^{21, 22} Such rapid changes in biliary obstruction are seldom found among patients with virus hepatitis of either of the two common types.⁹ Fulminating hepatitis should show rapidly deteriorating liver function associated with relatively less bile flow disturbance.⁹

Severe thorazine hepatitis or other forms of cholangiolitis may have periods of nearly total biliary closure, but such patients show relatively little liver damage and clinically run a surprisingly mild course in most instances.^{9, 13-19}

Another diagnostic feature which is provided by the Rose Bengal I¹³¹ Hepatogram in patients having almost complete biliary obstruction is the slow rate of blood clearance and the persistently high levels of dye retention in the liver. From both clinical and animal data these high blood levels appear to be caused by two main factors, namely, severe associated liver cell injury and continuing intrahepatic regurgitation of Rose Bengal with the bile into the general circulation. High blood levels of Rose Bengal or of bromsulphalein in severe obstructive jaundice have no differential diagnostic significance⁹ unless there is evidence of greatly reduced biliary tract patency, because the rates of blood clearance of both of these dyes are decreased in primary liver disease. However, a strongly positive bromsulphalein test or extremely slow blood clearance of Rose Bengal has about the same significance in respect to biliary obstruction as a strongly positive direct-acting van den Bergh's reaction. The latter test indicates intrahepatic vascular regurgitation of soluble bilirubin (solubilized by conjugation with glucuronic acid) during prior passage through the liver cells.²³

The liver uptake of Rose Bengal I¹³¹ is not prevented either by bilirubinemia or by high concentrations of bilirubin in the hepatic cells, as has been suggested by Brown and Glaser.⁶ The damaged livers of severely jaundiced patients and heavily poisoned (carbon tetrachloride) rabbits have been shown to be capable of removing Rose Bengal I¹³¹ from the circulation at rates proportional to their reduced liver function.¹⁹ Furthermore, the livers of patients with partially obstructive lesions of the biliary tract have been demonstrated to be capable of completely removing Rose Bengal from the blood and excreting it

into the intestines. Furthermore, injection of pure bilirubin in amounts sufficient to increase the normal blood levels more than 100-fold has not altered the normal Rose Bengal I¹³¹ liver dynamics in rabbits.¹⁹

The simultaneous injection of bromsulphalein at a dose level of 5 mg. per kg. along with tracer doses of Rose Bengal I¹³¹ stresses the liver and decreases the rate of Rose Bengal blood clearance only slightly. However, there is no interference with the normal rate of bromsulphalein blood clearance. Larger stress doses of bromsulphalein (10 to 50 mg. per kg.) grossly depress Rose Bengal blood clearance and liver uptake rates.¹⁹ Use of a mixture of bromsulphalein (5 mg. per kg.) and a tracer dose of Rose Bengal I¹³¹ promises to be a means for further sensitizing the present Rose Bengal I¹³¹ Hepatogram. The combined test (stress test) permits further investigation of the comparative sensitivity of the two separate dye tests simultaneously under identical conditions in man and in animals. Preliminary laboratory data indicate that when the Rose Bengal I¹³¹ bromsulphalein stress test is negative in animals recovering from acute carbon tetrachloride hepatitis, the pathological lesions have largely disappeared and tissue repair is practically complete.¹⁹

From the data available from studying more than 100 patients and several hundred rabbits, and from work of others,⁵⁻⁸ the Rose Bengal I¹³¹ Hepatogram as presently performed is a practical test procedure for evaluating liver vascularity, hepatic cell function, the degree of biliary tract patency and/or of bile flow interference. In difficult diagnostic cases repeated Hepatograms may provide clues concerning the primary nature of the illness more quickly than indirect biochemical liver tests.

SUMMARY

Recent progress in the development of an external liver tracer test (Rose Bengal I¹³¹ Hepatogram) has been described. Results of single and repeated Hepatograms

in patients and animals having a variety of liver-biliary tract disorders have been interpreted. When the Hepatogram is performed repeatedly on patients in whom the diagnosis is difficult to establish on clinical grounds, the changing pathophysiological events are reflected immediately by distinct alterations in the tracer test results. Serial Hepatograms have revealed the true nature of the primary functional derangement prior to confirmation by more slowly responding indirect biochemical liver tests.

Additional basic studies have shown that the Hepatogram may also indicate abnormalities in the patency of the biliary canaliculi immediately after an injection of decholin. Furthermore, recent laboratory work has shown that a mixture of bromsulphalein with Rose Bengal I¹³¹ may further increase the sensitivity of the Hepatogram.

In conclusion, the Rose Bengal I¹³¹ Hepatogram meets the basic requirements of a specific organ test. It measures liver vascularity, polygonal cell function, biliary tract patency and/or bile flow interference directly. It is performed externally using the same standard radiation detection equipment as routinely employed in I¹³¹ uptake tests for thyroid diagnosis. Results are reproducible and normal subjects have characteristic Hepatograms which are distinctly different from those found in patients with a variety of hepatobiliary disorders. Serial test results correlate well with the clinical findings and indicate the underlying pathophysiological disturbances, before confirmation by standard biochemical liver tests. The Rose Bengal I¹³¹ Hepatogram is presently the most sensitive specific test for polygonal cell function of the liver and is also of distinct value in the differential diagnosis of hepatobiliary disease.

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REFERENCES

1. Taplin, G. V., Meredith, O. M., Jr., and Kade, H.: The radioactive (I^{131} -tagged) Rose Bengal uptake-excretion test for liver function, using external Gamma-ray scintillation counting techniques, *J. Lab. & Clin. Med.* 45:665 (May) 1955.
2. Taplin, G. V., and others: The radioactive (I^{131} -labeled) Rose Bengal liver uptake-excretion test. Its use in the evaluation of hepatic function, *Proc. Internat. Conf. on Peaceful Uses of Atomic Energy* 10:355 (August) 1955.
3. Mendeloff, A. L.: Fluorescence of intravenously administered Rose Bengal appears only in polygonal cells, *Proc. Soc. Exper. Biol. & Med.* 70:556, 1949.
4. Taplin, G. V., Meredith, O. M., Jr., and Kade H.: The radioactive Diodrast and Rose Bengal tests for kidney and liver functions, *Indust. Hyg. Quart.* 18:65 (March) 1957.
5. Rosenberg, C. A., Lee, N. D., and Martignoni, P.: The use of radioactive Rose Bengal as a liver function test, *Clin. Research Proc. of Amer. Fed. of Clin. Research* 4:39 (January) 1956.
6. Brown, C. H., and Glaser, O.: Radioactive (I^{131} -tagged) Rose Bengal liver function test, *J. Lab. & Clin. Med.* 48:454, 1956.
7. Marshall, W., and Kozoll, D. D.: Liver uptake and blood clearance studies of radioactive Rose Bengal, *Proc. Central Soc. Clin. Research*, abstracted in *J. Lab. & Clin. Med.* 48:924 (December) 1956.
8. Lowenstein, J. M.: Radioactive Rose Bengal test as a quantitative measure of liver function, *Proc. Soc. Exp. Biol. & Med.* 93:377 (November) 1956.
9. Popper, A.: Hepatitis and hepatic tests, *Ciba Clin. Symposia* 8:81 (May-June) 1956.
10. Cattell, R. B., Colcock, B. P., and Pollack, J. L.: Stenosis of the sphincter of Oddi, *New England J. Med.* 256:429 (March 7) 1957.
11. Donaldson, G. A., Allen, A. W., and Bartlett, M. K.: Postoperative bile duct strictures: Their etiology and treatment, *New England J. Med.* 254:50 (January 12) 1956.
12. Preston, D. J.: Surgical treatment of non-calculous biliary tract disease, *J.A.M.A.* 159:17 (September 3) 1955.
13. Dickes, R., Schenker, V., and Deutsch, L.: Serial liver function and blood studies in patients receiving chlorpromazine, *New England J. Med.* 256:1 (January 3) 1957.
14. Van Ommen, R. A., and Brown, C. H.: Obstructive-type jaundice due to chlorpromazine (thorazine), *J.A.M.A.* 157:321 (January 22) 1955.
15. Sussman, R. M., and Sumner, P.: Jaundice following the administration of 50 mg. of chlorpromazine, *New England J. Med.* 253:499 (September 22) 1955.
16. Lemire, R. E., Jr., and Mitchell, R. A.: Regurgitation type of jaundice during prolonged therapy with chlorpromazine, *Arch. Int. Med.* 95:840 (June) 1955.
17. Bernstein, C., and Klotz, S. D.: Allergenicity of tranquilizing drugs, *J.A.M.A.* 163:930 (March 16) 1957.
18. Levan, N. E.: Chlorpromazine dermatitis: Occupational and immunochemical aspects, *New England J. Med.* 256:651 (April 4) 1957.
19. Taplin, G. V., Meredith, O. M., Jr., and Kade H.: UCLA Atomic Energy Project Semi-annual Report to U. S. Atomic Energy Commission (January-June) 1957.
20. Seligson, D.: Prognostication and Liver Function Tests, Clinical and Chemical Considerations, Symposium on Approaches to the Quantitative Description of Liver Function, U. S. Naval Radiological Defense Laboratory, San Francisco, California (October 3-November 2) 1956, to be published.
21. Brem, T. H.: Recognition of biliary tract obstruction without jaundice, *J.A.M.A.* 159:1622 (December 24) 1955.
22. Zollinger, R. M., Boles, E. T., and Crawford, G. B.: The diagnosis and management of biliary-tract disease, *New England J. Med.* 252:203 (February 10) 1955.
23. Schmid, R.: The conjugation of bilirubin with glucuronic acid, *J. Lab. & Clin. Med.* 48:940 (December) 1956.

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The Journal does not hold itself responsible for statements made by any contributor.

PROPOSED CHANGES IN THE MEDICAL AND LEGAL HANDLING OF NARCOTIC ADDICTION

In the last several years changes in the manner of medical and legal handling of narcotic addiction have been proposed. Articles have appeared in the lay press and in professional magazines, presentations have been made before subcommittees of Congress, and a resolution was presented to the House of Delegates of the American Medical Association, concerning certain phases of the problem, in June 1954. This resolution favored the legalization of distribution of narcotics to

addicts under the following safeguards: (1) establishment of narcotic clinics in cities where needed, under the aegis of the Federal Bureau of Narcotics; (2) registration and fingerprinting of narcotic addicts; (3) keeping of accurate records; (4) administering optimal doses at regular intervals to addicts at cost, or free; (5) prevention of self-administration; (6) attempt cures through voluntary hospitalization, if possible; and (7) avoidance of forceful confinement.

Consideration of the problem of the handling of narcotics, as a whole, brings out two points of view, not entirely divergent in theory, but far apart in the practical handling of the problem. One point of view as expressed could be summarized with the statement that drug addiction should be treated as an illness and not a crime, as it is an expression of an emotional problem and should be approached psychiatrically. It is stated that drug addiction is "a health problem which needs police measures for adequate control," and that our laws have made more difficult the sane, effective management of addiction. It is proposed in this situation that medical, psychiatric, and social services be made available to addicts, and that the follow-up of these patients be entirely free of punitive aspects. It is recognized that psychiatric care is needed and that the matter is complex. It is stated that a great deal of benefit may be achieved when it is possible to adjust the environment in the patient's favor. It is proposed that mandatory minimum sentences be abolished. These proposals are advanced with a view that the amount of addiction would be decreased and that the plight of the addict would be made less hard.

The resolutions mentioned above, which were presented to the House of Delegates of the A.M.A. were thoroughly studied by reference committees, by the Board of Trustees, by the Council on Pharmacy and Chemistry, and by the Council on Mental Health through a committee on narcotic addiction. In the past two years this

committee has given detailed study to the matters presented and has rendered a comprehensive report to the A.M.A. with certain recommendations. The report is a valuable summary of the problem and considers the development of the medical and legal aspects of addiction from the time following the adoption of the Harrison antinarcotic law to the present. The report comments with some caution in regard to the establishment of clinics, and notes that the clinics set up between 1919 and 1923 were unsatisfactory; that there was some abuse of the clinics, but the extent of the abuse was indeterminable. As a reaction against the clinics, the medical profession played a major role in formulating the policy which led to the closing of these clinics, and it does not recommend the establishment of clinics for the purpose of supplying drugs to addicts. The report does recommend continued research on the problems of addiction and comments that one of the current difficulties in formulating adequate programs is the lack of knowledge which should be both basic and clinical. It recommends that the American Medical Association continue to study the narcotic laws with the view of further clarification of the rights and duties of physicians. It points out that the phrases in the current law "in the course of professional practice only" and "prescription" remain vague and confusing. It further recommends improvement in the care of addicts, which would include increase in institutional facilities, increase in the postinstitutional treatment of addicts. Civil commitment to institutions, rather than criminal is advised, and abolition of criminal sentences for addicts who are guilty only of illegally possessing and obtaining opiates, marijuana, and cocaine.

The report states that mandatory sentences for addict violators would interfere with the possible treatment and rehabilitation of addicts and that this could be abolished.

The Council recommended that the policy of voluntary admission for the treat-

ment of addiction be continued, extended, and encouraged.

The House of Delegates of the American Medical Association approved the report and stated that the changes proposed in the legal handling of addicts should be undertaken cautiously so that we could progress realistically.

The national experience in the last forty years indicates the wisdom of the latter statement. Before the legal control of narcotics was established it is estimated that addicts were 1 in 400 in the general population, and they are now about 1 in 3000, giving us no more than 60,000 addicts. The states with the strictest laws have the least addiction.

Opiate addiction in itself does not appear to be an incentive to commit crime except for the purpose of securing the drug. This, however, is not true of cocaine and marijuana. It is estimated that 80 per cent of addicts are criminals first, and in general, become addicts in association with other addicts. The relapse rate continues high. In 1955, there were 3,724 admissions to the two federal narcotic hospitals. About two thirds of these were readmissions.

The medical profession, therefore, has before it the continuously revolving problem of narcotic addiction. The fate of 60,000 addicts is pitiable. What can be done to alleviate it should be done. It should not be undertaken at the risk of producing more addicts. Addiction is at its lowest point in the states that have the best law enforcement and reached its lowest point in years during the second world war when blockade was almost complete. Medical measures may possibly do much to lighten the burden of the unfortunate addict as an individual. In 80 per cent of addicts who were criminals before addiction developed, the illness phase of addiction is overshadowed by the criminal aspect. We would deduce, therefore, that any sharp relaxation of legal measures would have just the opposite effect to what the proposers of leniency are expecting.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

AMERICAN MEDICAL EDUCATION FOUNDATION

Within a reasonably short period of time every member of the Louisiana State Medical Society will be contacted by Dr. Edgar Hull, Chairman of the American Medical Education Foundation Committee, concerning a contribution during 1957.

The A.M.E.F. is an organization working among physicians, trying to interest said physicians in contributing toward non-federated medical education. No monies turned over to them or directly to a school or schools of choice are taxed for handling in any way. The A.M.E.F. is supported by the American Medical Association and this collection service is absorbed by the American Medical Association.

Statistics prove that in recent years, the A.M.E.F. has been poorly supported by physicians in Louisiana; considerably more money being given to L.S.U. and Tulane than was donated by our group.

In order for us to keep medical education in private hands, there must be some changes made. Without our support, the deficit incurred by medical schools each year is around ten million dollars.

I, personally, have been guilty of non-interest for several unjustifiable reasons, but my eyes have been opened and I can see the light—hence my appeal to you.

It is my hope that in 1957 we will break all records on the number of men contributing. Heretofore, a few have carried the ball and it would be considerably more fitting to have participation approximate one hundred per cent of our membership.

Please read the Chairman's letter and give considerable thought to an early contribution to the school or schools of your choice. There shall be committees from all of the congressional districts of the State, one of which may contact you. Please be receptive and make their work easy.

H. Ashton Thomas, M. D.
President
Louisiana State Medical Society

106th ANNUAL MEETING AMERICAN MEDICAL ASSOCIATION

The recent meeting of the American Medical Association held in New York will go down on record as the largest and one of the best to date.

The attendance broke all records. Total registration was 55,847, including 19,469 physicians.

The next largest attendance was experienced at Atlantic City in 1947 when 15,667 physicians were registered and at the last Chicago meeting, there were 9,969 physicians in attendance.

Louisiana was well represented by over fifty of its physicians. Keep the attendance up. This is really a postgraduate program containing many subjects of interest, and more of our doctors should take advantage of this wonderful opportunity for learning.

Revision of the Principles of Medical Ethics, relations with the United Mine Workers of America Welfare and Retirement Fund, the federal government's Medicare Program, new standards for medical schools, a new statement of occupational health programs, and Social Security benefits for physicians were among the wide variety of subjects acted upon by the House of Delegates.

Dr. Gunnar Gundersen, La Crosse, Wis., member of the A.M.A. Board of Trustees since 1948 and chairman for the past two years, was unanimously chosen president-elect for the year ahead. Shortly after his election the Board of Trustees selected Dr. Edwin S. Hamilton of Kankakee as its chairman. Dr. Hamilton has been a Board member since 1948 and served in the House of Delegates for 10 years prior to that.

Other officers elected or re-elected were:

Dr. Jesse Hamer of Phoenix, Ariz., vice-president; Dr. George F. Lull of Chicago, secretary; Dr. J. J. Moore of Chicago, treasurer; Dr. E. Vincent Askey of Los Angeles, speaker, and Dr. Louis Orr of Orlando, Fla., vice speaker.

Four new members were elected to the Board of Trustees: Dr. George Fister of Ogden, Utah, to succeed Dr. James R. Reuling; Dr. Cleon Nafe of Indianapolis, Ind., to succeed Dr. James R. McVay; Dr. James Z. Appel of Lancaster, Pa., to replace the late Dr. Thomas P. Murdock, and Dr. Raymond McKeown of Coos Bay, Ore., to replace Dr. Gundersen.

The House voted the 1957 Distinguished Service Award to Dr. Tom Douglas Spies, director of the nutrition clinic, Hillman Hospital, Birmingham, for his outstanding contributions to the science of human nutrition. For only the third time in history, the House also voted a special citation to a layman for outstanding service in advancing the ideals of medicine and contributing to the public welfare. Recipient of the award was Henry Viscardi, Jr., West Hempstead, N. Y., founder and president of Abilities, Inc., which employs only severely disabled persons.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY ELECTS NEW OFFICERS FOR 1957 - 1958

The twenty-first annual meeting of The New Orleans Graduate Medical Assembly will be held March 3-6, 1958, headquarters at the Roosevelt Hotel.

The following officers and members of the Executive Committee have been elected for this year:

- Dr. Charles L. Brown, President
- Dr. J. O. Weilbaeher, Jr., President-elect
- Dr. Max M. Green, First Vice-President
- Dr. Joseph N. Ane, Second Vice-President
- Dr. M. M. Hattaway, Third Vice-President
- Dr. Maurice E. St. Martin, Secretary
- Dr. Ralph M. Hartwell, Treasurer
- Dr. V. Medd Henington, Director of Program
- Dr. Sam Hobson, Assistant Director of Program
- Dr. H. Reichard Kahle, Assistant Director of Program

Executive Committee

- Dr. Eugene H. Countiss (retiring President)
- Dr. Hugh T. Beacham
- Dr. George D. Feldner
- Dr. George H. Hauser
- Dr. W. E. Kittredge

PAN-PACIFIC SURGICAL ASSOCIATION

Seventh Congress

The Seventh Congress of the Pan-Pacific Surgical Association will be held in Honolulu, Hawaii, November 14-22, 1957. All members of the profession are cordially invited to attend and are urged to make arrangements as soon as possible if they wish to be assured of adequate facilities.

An outstanding scientific program by leading surgeons with sessions in all divisions of surgery and related fields promises to be of interest to all doctors.

Further information and brochures may be obtained by writing to Dr. F. J. Pinkerton, Director of the Pan-Pacific Surgical Association, Room 230, Young Building, Honolulu, Hawaii.

BOOK REVIEWS

Textbook of Endocrinology; Edited by Robert H. Williams, 2d ed. (Multiple authors), Philadelphia, Pa., W. B. Saunders Company, 1955, 776 p. Price \$13.00.

This is an interesting, outstanding volume on clinical endocrinology. It is well edited and organized. The chapter by Reifenshtein will probably take the place of subsequent revisions of "The Parathyroid Gland and Metabolic Bone Disease" by Albright and Reifenshtein (1948).

It would be difficult for the average internist to criticize this book.

FRED M. HUNTER, M. D.

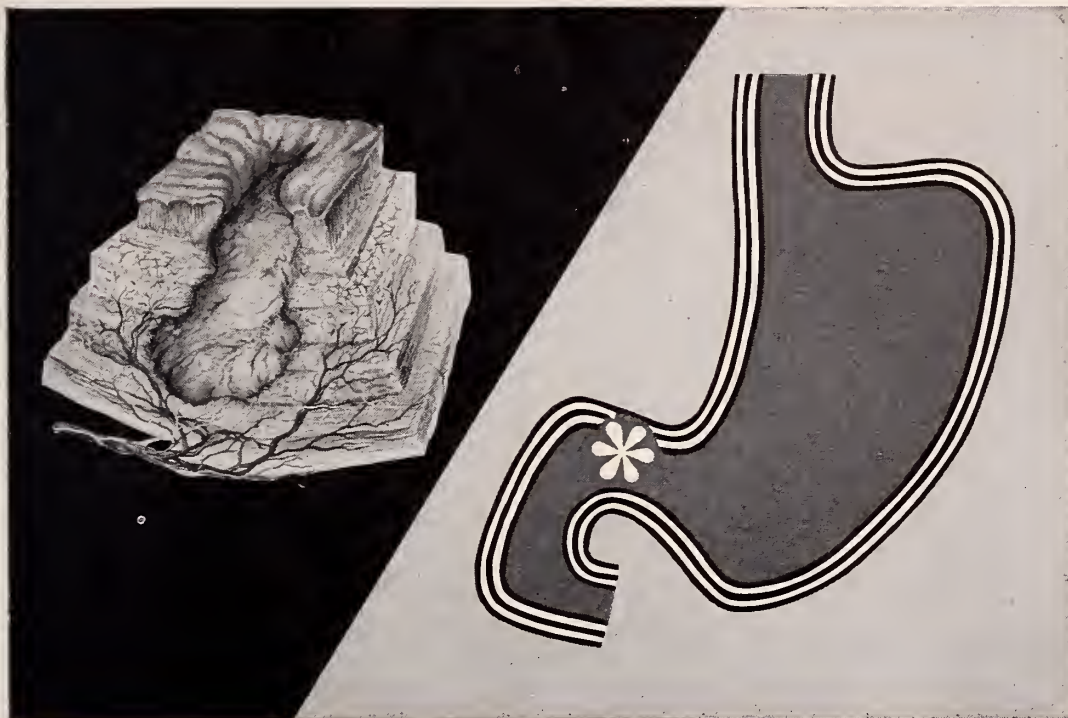
PUBLICATIONS RECEIVED

Doubleday & Co., Inc., Garden City, N. Y.: *A Woman Doctor Looks at Love and Life*, by Dr. Marion Hilliard.

Duke University Press, Durham: *The Compleat Pediatrician*, by W. C. Davison, M. D., and Jeana Davison Levinthal, M. D., (7th edit.).

Grosset & Dunlap, Inc., N. Y.: *A Visit to the Hospital*, by Lester L. Coleman, M. D., with an introduction by Flanders Dunbar, M. D.

Grune & Stratton, Inc., N. Y.: *Some Milestones in the History of Hematology*, by Camille Dreyfus, M. D.

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The efficiency of Pro-Banthine (brand of propantheline bromide) in inhibiting the chemical substance which mediates parasympathetic gastric activity explains the success of the drug in ulcer therapy. Pro-Banthine blocks acetylcholine at both the ganglia and parasympathetic effector sites. This dual action controls excess neural stimulation of both gastric secretion and motility.

The therapeutic benefits of this anti-

cholinergic blockade consist, as many clinical investigators have noted, in prompt relief of ulcer pain and pronounced acceleration of ulcer healing.

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In moderate to severe hypertension this single-tablet combination permits long-term therapy with dependably stable response. Each tablet contains 1 mg. Rauwiloid and 3 mg. Veriloid. Initial dose, 1 tablet t.i.d., p.c.

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- accelerated absorption in the gastrointestinal tract
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ACHROMYCIN V SYRUP: aqueous, ready-to-use, freely miscible. 125 mg. tetracycline per 5 cc. teaspoonful phosphate-buffered.

DOSAGE: 6-7 mg. per lb. of body weight per day.

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24-hour control

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Elemental Iron	38 mg.
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Vitamin B ₁₂ activity concentrate	4 mcg.
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FORMULA: Each 15 cc. (tablespoonful) contains:

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the tranquilizer Miltown in "Milpath" controls the psychogenic element in G. I. disturbances. (Miltown does not produce barbiturate loquacity or hangover)

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(3-diethylamino-1-cyclohexyl-
1-phenyl-1-propanol-ethiodide)
U. S. Patent 2,698,325.



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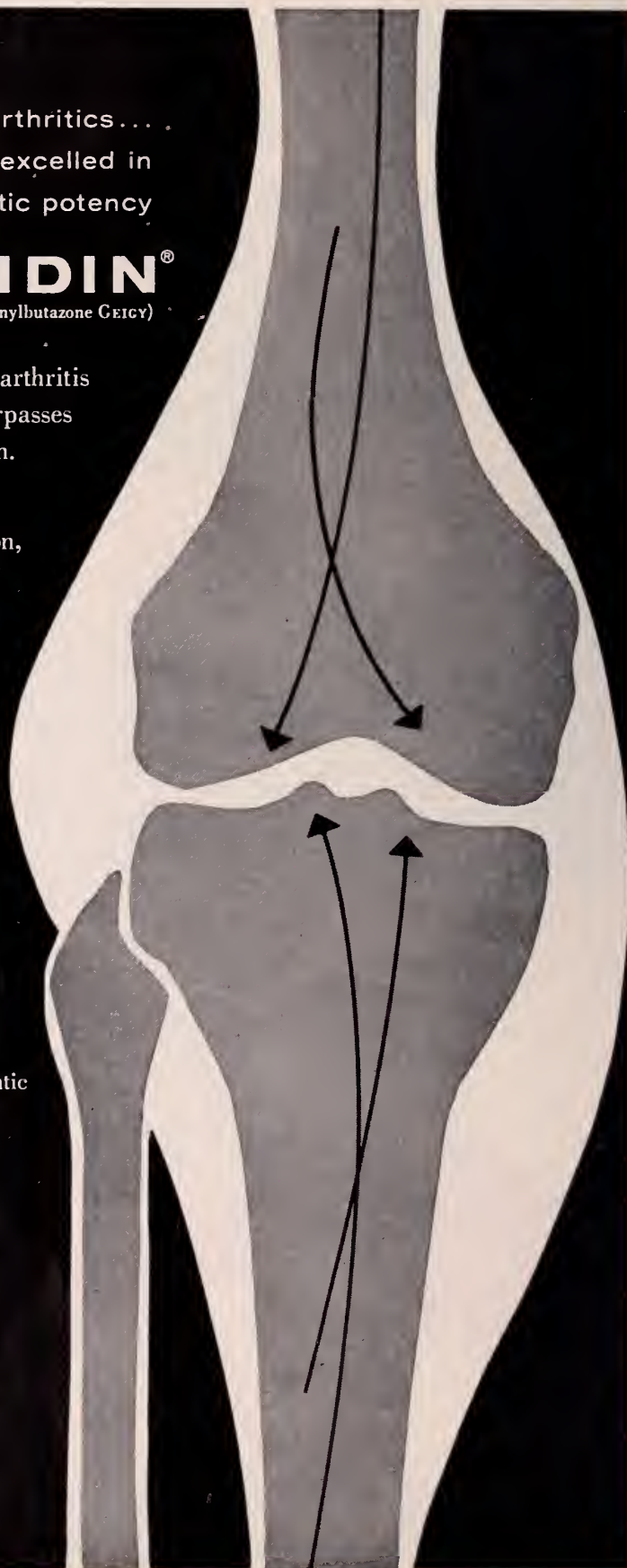
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*New added certainty in antibiotic therapy
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Signemycin V Capsules provide the unsurpassed antimicrobial spectrum of tetracycline extended and potentiated to include even those strains of staphylococci and certain other pathogens resistant to other antibiotics. The addition of the buffering agent affords higher, faster antibiotic blood levels following oral administration.

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*allays anxiety and tension
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NOSTYN is a *calmative*—not a hypnotic-sedative—unrelated to any available chemopsychotherapeutic agent • no evidence of cumulation or habituation • does not increase gastric acidity or motility • unusually wide margin of safety —no significant side effects

dosage: 150-300 mg. (½ to 1 tablet) three or four times daily.

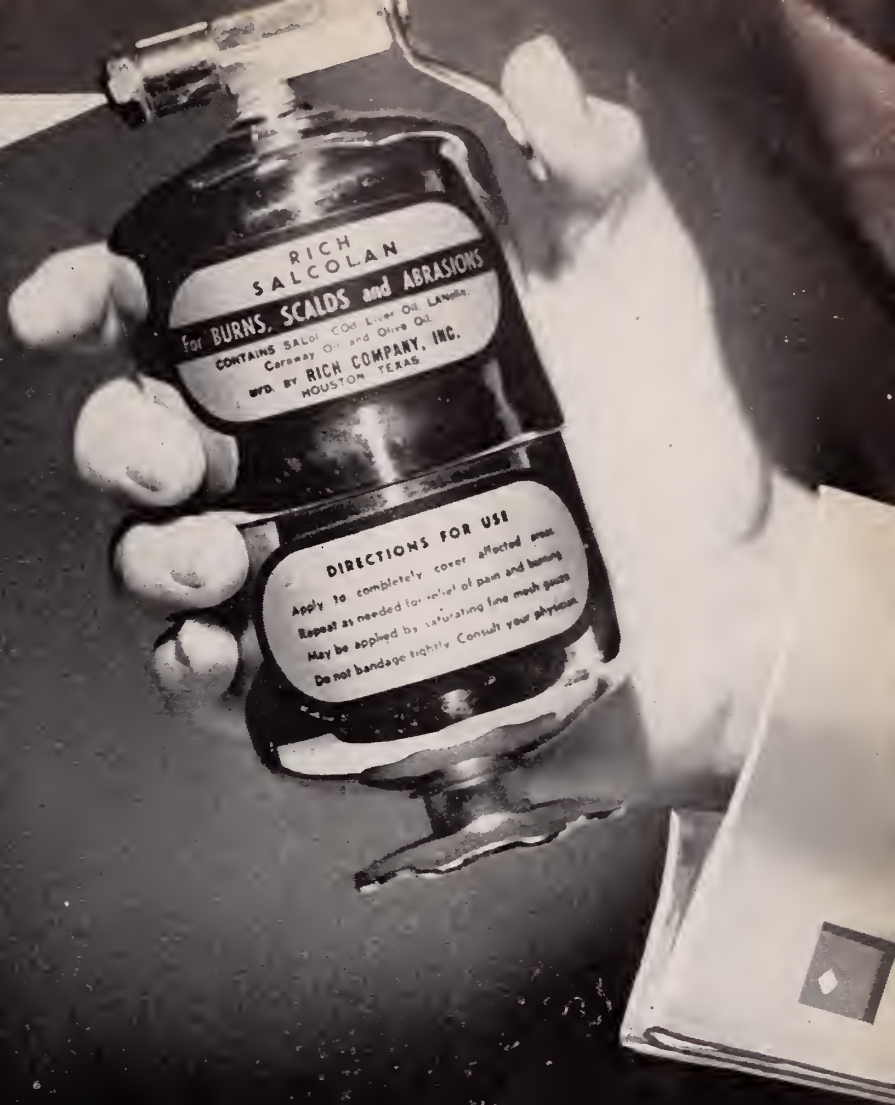
supplied: 300 mg. scored tablets, bottles of 48 and 500.

*Ferguson, J. T., and Linn, F. V. Z.: Antibiotic Med. & Clin. Therapy 3:329, 1956.



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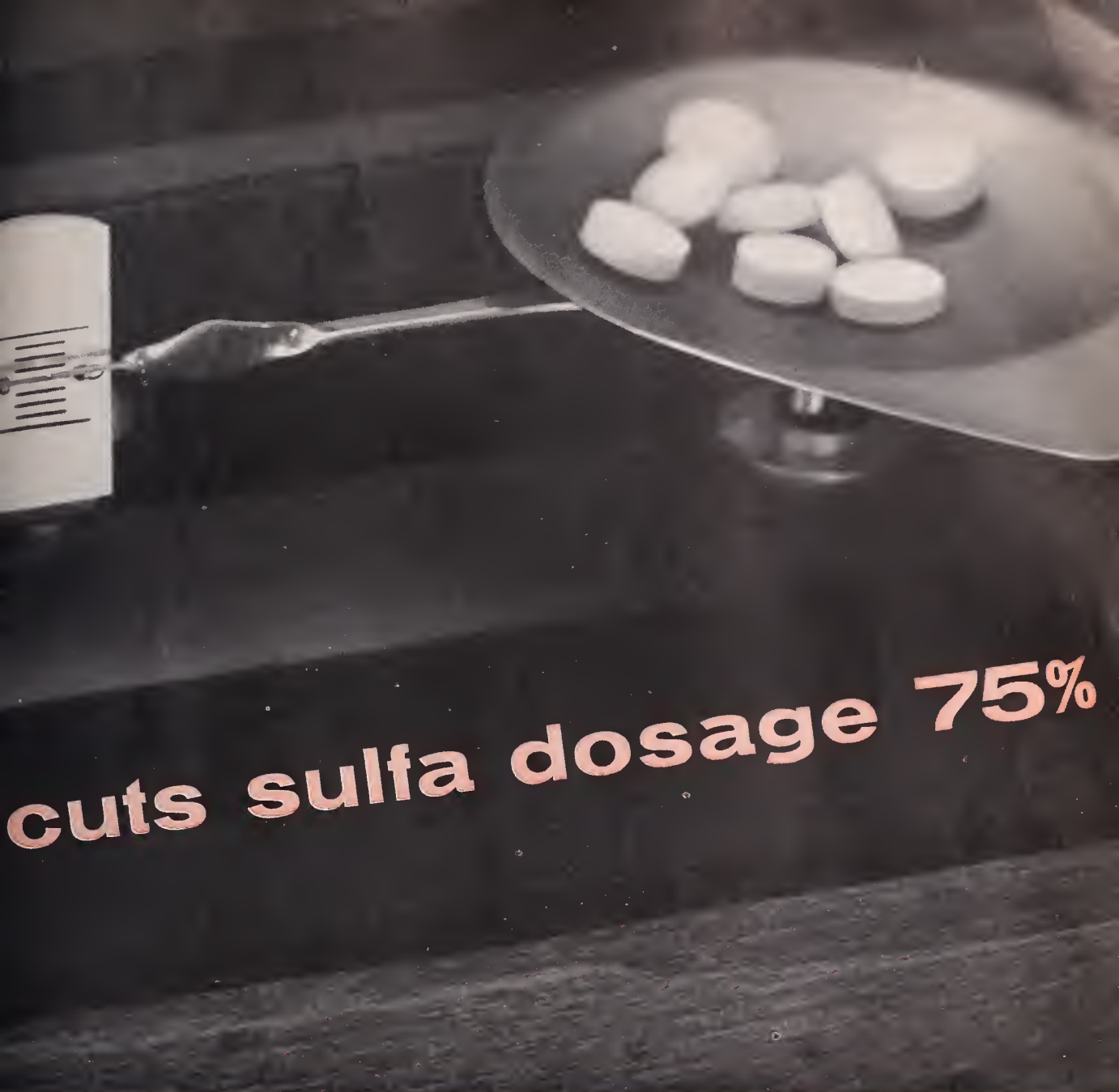
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antibacterial
effectiveness for 24 hours
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cuts sulfa dosage 75%

KYNEX Sulfamethoxypyridazine is a completely new, long-acting single sulfonamide with clinical advantages hitherto unequalled in sulfa therapy—

LOW DOSAGE¹—only 2 tablets per day.

RAPID ABSORPTION¹—therapeutic blood levels within the hour, blood concentration peaks within 2 hours.

PROLONGED ACTION¹—10 mg. per cent blood levels that persist over 24 hours on a maintenance dose of 1 Gm.

BROAD-RANGE EFFECTIVENESS—particularly efficient in urinary tract infections due to sulfonamide-sensitive organisms, including *E. coli*, *Aerobacter aerogenes*, paracolon bacilli, streptococci, staphylococci, Gram-negative rods, diphtheroids and Gram-positive cocci.

GREATER SAFETY—high solubility, slow excretion and low dosage help avoid crystalluria. No increase in dosage is rec-

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CONVENIENCE—the low maintenance dosage of 1 Gm. (2 tablets) per day for the average adult offers optimum convenience and acceptance to patients.

Each quarter-scored tablet contains: sulfamethoxypyridazine ...0.5 Gm. (7½ grains).

1. Boger, W. P.; Strickland, C. S. and Gylfe, J. M.: *Antibiot. Med. & Clin. Ther.* 3:378 (Nov.) 1956.

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KYNEX[®] SYRUP

SULFAMETHOXYPYRIDAZINE LEDERLE

- Aqueous—readily miscible
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- Readily acceptable by patients of all ages

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Hoxsey Claims Scored By Church Publication

"An Examination of the Claims of the Hoxsey Cancer Clinic"* an article by Francis D. Nichol, Editor of the Review and Herald, general Church paper of the Seventh Day Adventists, is considered a most effective review by the American Cancer Society's Committee on New or Unproved Methods of Cancer Treatment.

The Review and Herald published the Food and Drug Administration's warning concerning the Hoxsey treatment for internal cancer in June, 1956. A large number of protesting letters from subscribers prompted Mr. Nichol's personal study of the claims made by Mr. Hoxsey. His well-documented article includes the investigations made by competent medical authorities, by the National Cancer Institute and the Food and Drug Administration. He states the importance of "Early detection and prompt adequate treatment of cancer", and concludes:

"We have studiously sought to deal with Mr. Hoxsey's alleged evidence, not with his motives. We do not attempt to say whether his heart is good, but only whether his medicine is. We must conclude that it is not good, even though his patients may think it is. Indeed, there lies its greatest danger—it lulls cancer patients into a false sense of security and, meanwhile, time flies. Accordingly, we can do no other than stand by the Food and Drug Administration's warning notice that we published last June."

Mr. Nichol has been commended by professional organizations, the U. S. Department of Health, Education and Welfare, other voluntary agencies and many doctors for his objective and dispassionate document.

* A reprint of "An Examination of the Claims of the Hoxsey Cancer Clinic" may be obtained from the Louisiana Division of the American Cancer Society, 822 Perdido Street, New Orleans 13, La.



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1. Cornbleet, T., and Barsky, S.: The Role of the Tranquilizing
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Hurricane Audrey and the State Department of Health

Louisiana Public Health workers all over the State are walking a little taller today because of their pride in their Department and their fellow workers.

Hurricanes, floods and other disasters are an old story to the Health Department and have been since the yellow fever epidemics of the 1850's. The role played by the Department's personnel during and after Hurricane Audrey is only the latest chapter in the Department's unceasing effort to protect the public health. It is in some respect a routine tale, but it is also a story of courage and extraordinary devotion to duty. It is, above all, a shining example of the value of organized public health activities.

Teams of public health workers headed up by physicians and composed of nurses, sanitarians, engineers, food and drug personnel, laboratory workers, entomologists, nutritionists, health educators and others were sent into the disaster area immediately.

Some of the activities and services provided by the public health workers are as follows:

Staffing of emergency shelters, provision of emergency care, immunizations.

Emergency chlorination of public water supplies, fogging, spraying and dusting for fly, mosquito and other insect control, supervising the sanitation of shelters, sampling, checking and chlorinating of private water supplies.

Safe methods of excreta and waste disposal were established, emergency food supplies were supervised, poison baits were set out for rat control, and flood-damaged food supplies were placed under seizure for laboratory study until it can be proven whether they are safe or unsafe for human consumption.

In addition to the services mentioned above, the Department's personnel also worked with other agencies in human and animal rescue work and in the disposal of animal carcasses, in the deodorizing and cleaning of public buildings, distributed typhoid vaccine, polyvalent snake serum, tetanus antitoxin and gas gangrene antiserum, and helped establish and operate emergency food centers in shelters and other places for evacuees and rescue workers.

While all of the above was going on, routine duties were also being carried out by the local public health workers in the disaster area. This routine work included frequent bulletins by press, radio and television to keep the people apprised of the current status of the situation in the disaster area with reference to health matters, and to advise them of precautions which should be taken by all persons working in the area.

The bulk of the work done by Department of Health personnel was in the Cameron-Calcasieu area, but all parishes in the state affected by the storm received similar type services.

The Department is extremely grateful to the doctors, nurses, civil defense workers, Red Cross and utilities people and others who did such a magnificent job in helping our people in Louisiana.

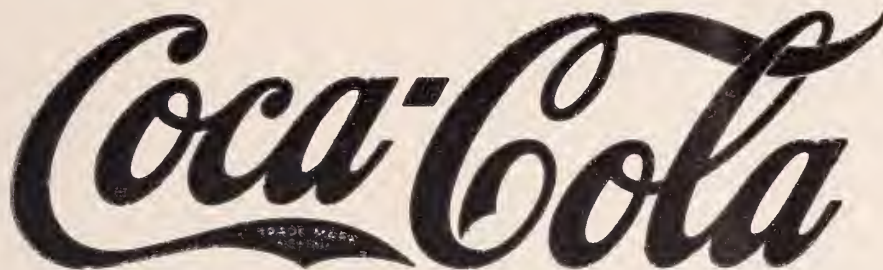


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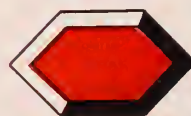
Patients became more lucid and alert, for example, in a study¹ of chronically ill, agitated senile cases treated with Harmonyl. And these patients were completely free from side effects—although a group on reserpine developed such symptoms as anorexia, headache, bizarre dreams, shakes, nausea.

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References: 1. Communication to Abbott Laboratories, 1956. 2. Moyer, J. H. et al: Deserpidine for the Treatment of Hypertension, Southern Medical J., 50:499, April, 1957.



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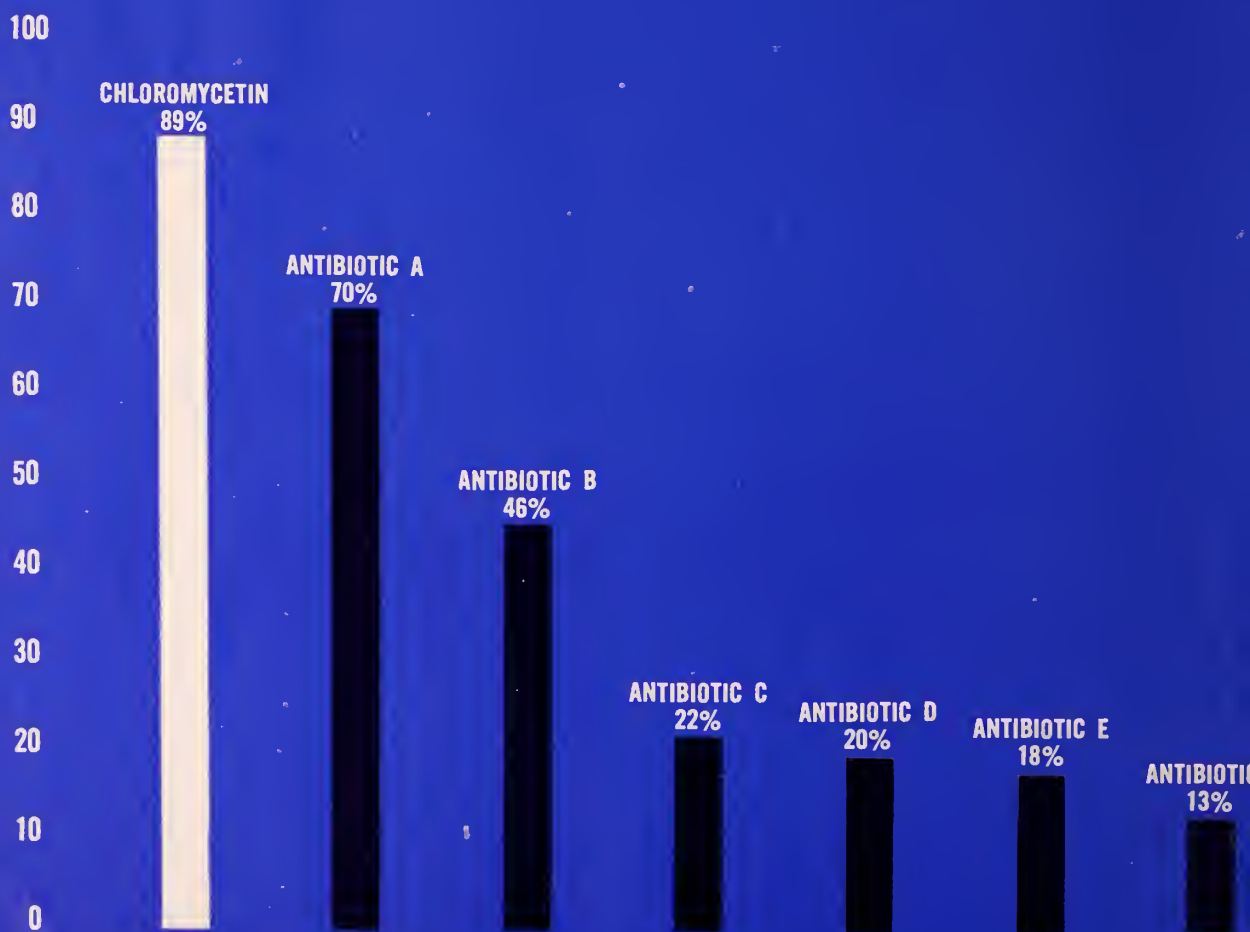
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REFERENCES

- (1) Kempe, C. H.: *California Med.* 84:242, 1956. (2) Petersdorf, R. G.; Bennett, I. L., Jr., & Rose, M. C.: *Bull. Johns Hopkins Hosp.* 100:1, 1957. (3) Spink, W. W.: *Ann. New York Acad. Sc.* 65:175, 1956. (4) Yow, E. M.: *GP* 15:102, 1957. (5) Altemeier, W. A., in Welch, H., & Marti-Ibanez, F: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 629. (6) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956. (7) Wise, R. I.; Cranny, C., & Spink, W. W.: *Am. J. Med.* 20:176, 1956. (8) Smith, R. T.; Platou, E. S., & Good, R. A.: *Pediatrics* 17:549, 1956. (9) Cohen, S.: *Postgrad. Med.* 20:483, 1956. (10) Royer, A.: Scientific Exhibit, 89th Ann. Conv. Canad. M. A. Quebec City, Quebec, June 11-15, 1956. (11) Bennett, I. L., Jr.: *West Virginia M. J.* 53:55, 1957. (12) Altemeier, W. A.: *Postgrad. Med.* 20:319, 1956. (13) Felix, N. S.: *Pediat. Clin. North America* 3:317, 1956. (14) Metzger, W. I., & Jenkins, C. J., Jr.: *Pediatrics* 18:929, 1956. (15) Woolington, S. S.; Adler, S. J., & Bower, A. G., in Welch, H., & Marti-Ibanez, F: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 365.

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References: 1. Borrus, J. C.: *M. Clin. North America*, 1957. 2. Gillette, H. E.: *Internat. Rec. Med. & G. P.* 169:453, 1956. 3. Pennington, V. M.: *J.A.M.A.*, 1957. 4. Cayer, D.: Prolonged Anticholinergic Study of Duodenal Ulcer. *Am. J. Dig. Dis.* 1:301-309, 1956. 5. McGlone, F. B.: Personal Communication to Lederle Laboratories. 6. Texter, E. C., Jr.: Personal Communication to Lederle Laboratories. 7. Bauer, H. G., McGavack, T. H.: Personal Communication to Lederle Laboratories.

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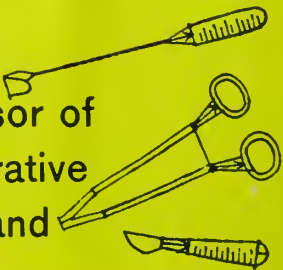
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DISORDERS OF THE SALIVARY GLANDS *

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In the general practice of otolaryngology as well as in the general practice of medicine, one is not infrequently confronted with problems related to disorders in the development and function of the salivary glands. These disorders may be secondary to congenital abnormalities, neoplastic changes, inflammatory conditions, secretory disturbances, or diseases adjacent to the salivary glands. (See Table I).

By salivary glands, we mean not only the major, commonly known, paired glands—the parotid, submaxillary, and sublingual—but also, the aberrantly placed salivary tissue that may be found in the palate, buccal mucosa, lips, and pharynx. Anatomically, this tissue is in close proximity to the oral cavity, and its primary physiology is concerned with it.

The main function of the salivary glands is to produce saliva. The character of the saliva secreted by the submaxillary, sublingual, and parotid glands depends on the type of cell in each particular gland. The parotid secretion is wholly serous; it is thin and watery and has a low con-

tent of organic matter. The submaxillary secretion is of the mixed type, mucous and serous. In the sublingual gland, the accini are chiefly of the mucous type with a few serous alveoli. These mucous cells secrete a thick viscid material, rich in mucus. This also is true of the small glands scattered over the buccal mucosa. The type of secretion depends upon the nature of the secretory stimulus, either through mediation of nerve action, chemical influence, drugs, psychic effect, or abnormal metabolic products. Under ordinary conditions, the secretion of saliva is produced by stimulation of the afferent

TABLE 1
DISORDERS OF THE SALIVARY GLANDS
CLASSIFICATION

- | |
|--|
| 1. Inflammatory Conditions (Sialadenitis). |
| Nonsuppurative |
| Epidemic and Nonepidemic |
| Suppurative |
| 2. Calculus Formation (Sialolithiasis). |
| Duct |
| Gland |
| 3. Neoplasms. |
| Primary |
| Ectopic |
| Metastatic |
| 4. Secretory Disturbances. |
| Sialorrhea (Increased) |
| Xerostomia (Decreased) |
| 5. Miscellaneous Conditions. |
| (1) Hyperplastic |
| (2) Traumatic |
| (3) Cystic |
| (4) Allergic |
| (5) Anomalous |
| (6) Adjacent structures |

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nerves, by food (unconditioned reflex), or by stimulation of some organ of special sense other than taste (conditioned reflex). The saliva is slightly acid in reaction, and in man it amounts to from 1000 cc. to 1500 cc. in a twenty-four hour period, containing 99.5 per cent water and 0.5 per cent total solids. Despite the fact that the parotid gland is the largest of the principal salivary glands, it contributes only 26 per cent of the total salivary secretions. The submaxillary glands, though smaller, produce about two and one-half times as much, or 69 per cent, while the sublingual glands contribute 5 per cent.¹

Saliva is normally so constantly present in the mouth that we usually fail to appreciate it. The functions of saliva are: (1) action of ptyalin, an enzyme normally present, on the starch molecule; (2) preparation of food for swallowing by altering its consistency to an ingestible gelatinous mass; (3) solvent action to chemically stimulate the taste buds; (4) cleansing action on the lips, teeth, tongue, gums, and oral mucosa; (5) moistening and lubricating the tongue, mouth, and lips; (6) excretion of certain drugs and organic substances; and (7) the regulation of water balance (sensation of thirst).

In addition to these well-known benefits of saliva, there is evidence that other functions may be interrelated with the physiology of iodine, thyroid, and sugar metabolism. Another interesting, more recent use of saliva has been as a pre-natal sex test, employing the Rapp-Richardson procedure.⁵

INFLAMMATORY DISORDERS (SIALADENITIS)

In accordance with Table 1, we have classified this disorder as suppurative and nonsuppurative. Enlargement of the salivary glands, whether symptomatic or asymptomatic, may be a prominent manifestation of a general systemic disease or a local one.²

The well-known example of the nonsuppurative disorder in this group is epidemic sialadenitis. This is a communicable disease, characterized by swelling, pain,

and tenderness, associated with fever. It is a manifestation of a systemic disease, usually occurring in epidemics, and its etiologic agent is known to be a filtrable virus. It may occur in all ages, but is commonly found between the ages of five and fifteen. The course of the illness is self-limited frequently, but one must be acutely aware of its complications, i.e., orchitis, pancreatitis, and encephalitis, with or without inflammatory involvement of the eighth nerve, resulting in permanent deafness. Treatment is primarily that of rest and symptomatic therapy, although many therapeutic agents have been tried without favorable results, including the antibiotics and steroids. There appears to be definite contraindication to the use of the latter in any virus disease.

Another example of the nonsuppurative inflammatory conditions is Mikulicz's disease, a rare malady that is predominantly found in the parotid glands. It is usually asymptomatic, although not invariably so. When symptoms are present, they are mild and not very helpful in distinguishing the disease from parotid neoplasms. Its course is benign, and at present it is thought to be most effectively treated by irradiation.

Brief attention should be directed to Sjogren's syndrome, which has long been recognized by the ophthalmologist as keratoconjunctivitis, but is often not recognized by the otolaryngologist. In our field, it is manifested by atrophy of the mucous membranes of the upper respiratory tract with associated xerostomia and swelling of the salivary glands.

Suppurative sialadenitis is of bacterial origin and may be acute or chronic. The parotid gland is most frequently involved unless the infection is initiated by the presence of a calculus, which is much more often found in the submaxillary glands and ducts. Formerly, it was not uncommon to find suppurative parotitis in elderly patients with a chronic debilitating systemic disease or following major surgery. Since the advent of antibiotics, better

hydration, and the practice of better oral hygiene, the incidence is much lower. The infection is thought to be retrograde from oral sepsis, following decreased parotid secretions caused by dehydration. There is usually unilateral involvement with pain and fever, and on examination the swollen gland is hot and exquisitely painful, and one can frequently express pus through the orifice of Stensen's duct. Treatment is basically that of alleviating the underlying systemic abnormalities, instigating antibiotic therapy, dilatation of the duct, followed by massage of the gland, expressing the purulent material to the orifice of Stensen's duct. Roentgen therapy is not thought to be particularly beneficial in such cases.¹ Rarely now does it become necessary to employ incision and drainage.

Chronic inflammatory conditions of the salivary glands are found more commonly in the submaxillary glands than in the parotid. This is thought to be caused by the higher incidence of calculi or strictures resulting from calculi, with impaired evacuation of secretions. Treatment is surgical extirpation of the gland. In the rarer instances involving the parotid glands, the findings may be bilateral but are most frequently unilateral. The symptoms are recurrent acute attacks of the suppurative process, alternating with periods of relative quiescence. The etiology is unknown, but the condition may be due to failure of a complete remission of an acute attack, or it may be caused by a stricture of the major duct or the lesser radicals, the latter condition sometimes being called sialectasis. This diagnosis has been enhanced by the use of secretory sialography.⁶ If the patient is seen during a quiescent period, the involved gland may be slightly larger than normal, and one is able to express viscid purulent secretion in flakes, mixed with clear serous saliva. If stricture is present, it usually can be demonstrated by probing the duct with a lacrimal dilator; and on sialography, one can often demonstrate some abnormality of the duct or gland. Treatment is difficult and not always satisfactory. It con-

sists of repeated dilatations of the duct with massage of the gland, accompanied by intensive specific antibiotic therapy. Occasionally surgical removal of the gland may be necessary to effect a cure.

CALCULUS FORMATION (SIALOLITHIASIS)

Calculus formations in the salivary glands are relatively common, and when present, usually produce symptoms of obstruction. They are more often found in the submaxillary gland and ducts because of the greater viscosity and higher mineral content of these secretions, the longer duct, and the location of the gland at a level inferior to the floor of the mouth, and due to the location of the ostium of Wharton's duct. Stones which are in the duct or in the gland can often be palpated. The symptoms produced are essentially those of obstruction, the first attack being associated with eating, and may be manifested by sudden painful swelling of the gland. The symptoms may subside; but with subsequent attacks, become less severe. Between attacks the gland does not completely return to normal size. As stones are usually present for some time prior to becoming symptomatic, one finds an associated stricture formation that may often cause symptoms to continue after the stone is removed.

Stones are palpable and radiopaque, so that x-ray is an invaluable aid in establishing the diagnosis. A smaller percentage are radiolucent, and then the diagnosis is made by history, palpation—both manually and by means of a probe inserted into the duct—and sialography. When secondary infection is present in the gland, one may express purulent material through the duct. This is more particularly true when the calculus is in the substance of the gland than when in the duct. Treatment of calculi varies with the location. When the stone is in the substance of the gland and has produced obstruction and chronic inflammatory changes, the therapy of choice is excision of the gland. In such situations, one should always be sure that the stone has been removed at the time of surgery and

not pushed distally into the duct. Also, the acute inflammation should be controlled with antibiotics preceding surgery. Calculi in the duct may often be removed through the ostium and delivered into the floor of the mouth. At other times, it may be necessary to dilate the duct with lacrimal dilators and then express the calculus. If one is unsuccessful with these procedures, the duct may be incised, using a dilator or probe as a guide, and then the stone removed with forceps. The latter method has the added advantage of enlarging the stricture.

NEOPLASMS

Neoplasms of the salivary glands have been and are most difficult to classify, as attested by the various classifications one encounters in the literature. More recently, the one presented by Foote and Frazell³ has been most universally used, and is the one with which we are familiar.

The benign mixed cell tumor is the most common neoplasm encountered in the salivary glands. It is found predominantly in the parotid gland, in a ratio of 10:1 to its occurrence in the submaxillary gland; and, characteristically, the mass has been present over several years without change in size. Historically, it causes no pain and there is no associated facial palsy. Needless to say, clinical differentiation of a tumor between benignancy and malignancy is difficult and treacherous. Pain and facial paralysis are more often experienced in malignancies than in benignancies. The mixed cell tumor is often rounded and unattached to the overlying skin. It is not smooth and on gross examination one sees that it is enveloped in a thin capsule. One should not be misled by this observation at the time of surgery, for microscopically it has been found that strands of tumor extrude through this capsule in the manner of "pseudopods" and project into the apparently normal parotid gland tissue. This explains the high rate of recurrence, 35 per cent, following simple enucleation of the tumor mass, and the present day conception is that mixed cell tumors should be excised with wide mar-

gins of normal tissue; in effect, a subtotal parotidectomy should be performed. Every effort should be exerted to preserve the facial nerve at the time of surgery, employing the nerve stimulator freely if necessary. We have not seen a benign tumor involve the facial nerve.

Another example of benign salivary gland tumor that one may find in the parotid is the papillary cystadenoma lymphomatosum or Warthin's tumor. Orloff,⁴ in his excellent discussion of this tumor, states that to date no acceptable instance of a malignant transformation of a papillary cystadenoma lymphomatosum has been recorded. Again, surgical therapy rather than irradiation is the treatment of choice.

Mixed tumors may rarely be malignant. However, in spite of this, biopsy of the gland prior to surgery is not recommended. Aspiration biopsy has been employed but not found to be entirely satisfactory, for obvious reasons.

The malignant tumors commonly encountered in the salivary glands, and again much more often found in the parotid, are the squamous cell carcinomas, the adenocarcinomas, and the mucoepidermoid carcinomas. If examination of the tumor at the time of operation causes suspicion of malignancy, a biopsy should be obtained and definitive surgery postponed until an exact diagnosis is established. The treatment of choice is complete extirpation of the gland with sacrifice of the facial nerve, in the case of the parotid, and concomitant en bloc radical neck dissection. If there is doubt that the tumor was or cannot be completely removed by surgery, radiation therapy to tolerance is indicated.

Ectopic salivary gland tumors are not rare. The hard palate appears to be the most common location, but they may occur anywhere in the upper respiratory tract. These tumors are classified according to the ones found in the major salivary glands, and are treated in a similar manner.

Malignancies of adjacent structures, such as the cervical nodes, the ear, and

the pterygomaxillary fossa, may involve the salivary gland by direct extension.

SECRETORY DISTURBANCES

Sialorrhea. (See Table 2).

Excessive salivation may be physiological or pathological, real or apparent. Physiological sialorrhea normally occurs in babies at the time of cutting teeth and

TABLE 2
SECRETORY DISTURBANCES

	Increased (Sialorrhea)	Decreased (Xerostomia)
Physiological—		
	Teething	Exercise
	Foods	
	Tobacco	
Drugs—		
	Iodides	Atropine
	Pilocarpine	Belladonna
	Histamine	Narcotics
	Nicotinic acid	Chlorpromazine
	Reserpine	Dramamine
		Probanthine
		Pathilon
		Antihistamines
Reflex—		
	Emotional stress	Emotional stress
Disease—		
	Oral and pharyngeal lesions	Dehydration
	Muscle paralysis	Irradiation therapy
	Rabies	Diabetes
	Paralysis agitans	Shock
	Encephalitis lethargica	
Idiopathic—		Elderly females

disappears after the child presents the deciduous teeth. It may be apparent when one is unable to swallow the amount of saliva that is secreted normally, i.e., in obstructive or paralytic lesions of the hypopharynx or esophagus. Physiologic sialorrhea is also present following use of tobacco and as a reflex phenomenon upon the sight or smell of gustatory stimulants.

Pathological salivation is usually found in conjunction with local lesions of the mouth and pharynx, i.e., stomatitis, gingivitis, glossitis, dental disease, malignancies in these areas, and Vincent's infection. In malignancies the sialorrhea is both real and apparent due to difficulty in swallowing. It is also present in emotional stress,

rabies, paralysis agitans, and encephalitis lethargica.

The treatment is primarily that of management of the underlying disease. Astringent mouth washes and small doses of atropine may be helpful. In cases of esophageal obstruction or neurological lesions, tracheotomy may be necessary to keep the tracheobronchial tree cleansed of secretions that are aspirated.

Xerostomia. (See Table 2).

Xerostomia or decreased salivary flow may be physiologic or pathologic, temporary or permanent. Physiologically, one finds decreased salivation in dehydration, whether following exercise or underlying systemic disease, and it represents the attempt of the body to conserve fluids. On examination, the mucous membranes of the oral cavity are quite dry, furrowed, and sticky, and the secretions from the salivary ducts are viscid and difficult to express. There are patches of thick tenacious sputum on the posterior pharyngeal wall. Mastication is difficult and one forces food with liquids. Consequently, nutrition is inadequate and this further complicates the picture.

Acquired xerostomia, following radiation therapy to the head and neck, is usually temporary and reversible after completion of the treatment. Certain drugs, i.e., atropine, belladonna, narcotics, antihistamines, and motion sickness medications, also decrease salivation. Emotional stress, too, plays a part, as shown in a public speaker who frequently drinks water during the course of a talk.

Idiopathic xerostomia, found in elderly females, is permanent, irreversible, and quite difficult to treat. Symptomatic and supportive therapy are the primary methods of treatment. Of course, here again, acquired xerostomia must be handled by management of the underlying disease.

MISCELLANEOUS CONDITIONS

The parotid, anatomically, is in an unprotected position and, therefore, vulnerable to trauma. In spite of this, permanent injury to this gland, even in facial injuries, is rare. Temporary fistulae may

develop, but they usually heal in time, even if the larger ducts have been severed.

Allergy may play a part in the development of sialiectasis when no evidence of acute or chronic inflammation can be demonstrated in the parotid and submaxillary glands. This is explained by some as being due to obstruction of the radicals by plugs of secretion in which a number of eosinophiles have been noted microscopically.

We have observed at times of stress that there is an idiopathic symmetrical enlargement of the salivary glands, particularly the submaxillary, which is temporary and subsides approximately thirty minutes after the stress reaction has recovered. The etiology of this is not completely understood.

According to Lathrop,¹ congenital anomalies of the salivary glands are rare, but any malformation may develop. These include complete absence of the glands, failure of one or more to develop to maturity, obliteration of the ducts, or formation of cysts. Mention has already been made of aberrant salivary gland tissue.

REFERENCES

1. Lathrop, Frank D.: Diseases of the salivary gland. *Laryngoscope*, 66:251 (March) 1956.
2. Fitz-Hugh, G. S., McGovern, F. H., and Craddock, W. E.: Diseases of the salivary glands. *Southern M. J.*, 48:491 (May) 1955.
3. Frazell, E. L.: Clinical aspects of tumors of the major salivary glands. *Cancer*, Vol. 7, No. 4, July, 1954.
4. Orloff, M. J.: Benign epitheliolymphoid lesions of the parotid gland, papillary cystadenoma lymphomatous and Mikulicz's disease. *Surg. Gynec. & Obstet.*, 103: 521 (December) 1956.
5. Ellin, R. L., and MacDonald, W. J.: An evaluation of the saliva prenatal sex test. *Am. J. Obst. & Gynec.*, 72: 1021 (November) 1956.
6. Blatt, I. M., and others: Secretory sialography in diseases of the major salivary glands. *Ann. Otol., Rhinol. & Laryng.*, Vol. 65, No. 2, 65:295 (June) 1956.

—O—

CARE AND MANAGEMENT OF THE BURNED PATIENT *

HUGH C. ILGENFRITZ, M. D.
SHREVEPORT

So much has been written in the past fifteen years about the general and local care of the burned patient that it is

worthwhile to reconsider some of the basic principles involved. Much time can be saved, much expense avoided, and far better functional and cosmetic results obtained if a reliable routine plan can be established and followed by those who treat burned patients occasionally in the course of general surgical practice. Such a plan can be used also as a point of departure for critical evaluation of new findings and recommendations as they appear in the medical literature.

A severe burn is a special type of injury, and its treatment is based on the same principles as the management of any other severe trauma—to administer the required supportive treatment, to correct or to avoid a state of actual or impending shock, to protect the wound from further injury, to obtain prompt closure and healing, and to restore normal function and general health as quickly as possible. General treatment and local treatment therefore parallel each other and are conducted simultaneously and with equally close attention throughout the course of the illness. A good final result depends just as much on proper attention to the general requirements of the patient as the local management of the burned areas.

SHOCK

The tendency to development of shock is roughly proportionate to the extent of the burn. In any patient with a burn covering 10 per cent or more of the body surface, the possibility of shock is present, with the probability increasing as the extent of burn increases. This is especially true in children, older people, and patients with coincidental disease such as diabetes, or disease of the heart, lungs, or kidneys, and in patients with associated trauma sustained at the same time as the burn. The possibility of such additional injuries or coincidental disease must always be considered in these patients.

It is well known, of course, that burn shock is due chiefly to sudden and progressive decrease in the circulating blood volume, as a result of the movement of protein-containing fluid from the vascular

* Presented at the Seventy-seventh Annual Meeting of the Louisiana State Medical Society, May 8, 1957, New Orleans.

system into the burned areas. This loss of fluid from the blood stream continues for from forty-eight to sixty hours, after which time the resorption of fluid from the tissues back into the blood stream begins. The tendency to shock during this time is increased by the marked loss of erythrocytes from the circulating blood, at least partly due to destruction at the site of the burn. Because of hemoconcentration due to fluid loss, the decrease in red cell mass does not become apparent until after the third day, when plasma loss has ceased and fluid is being restored to the blood stream. With restoration of the normal circulating blood volume after this time, the previously hidden anemia becomes apparent.

The burned patient is seen immediately upon admission and treatment is begun preferably in the operating room, under complete aseptic precautions. The room should be warm rather than cool and drafts or air currents should be kept from the patient, to avoid chilling and discomfort. All burns must be considered to be serious and potentially fatal until proven otherwise and the development of shock must be foreseen in all but minor burns.

IMMEDIATE LOCAL AND GENERAL TREATMENT

The clothing is removed or cut away gently; adherent clothing is soaked off with warm normal salt solution. Tetanus antitoxin is given in the usual prophylactic dosage, after preliminary tests for sensitivity, or a booster dose of tetanus toxoid is given if the patient has been immunized previously. The extent of the burn is estimated as accurately as possible and the patient's weight is estimated or obtained. It is convenient, in estimation of extent of burn, to use the rule of 9, proposed by Wallace¹ and advocated by Evans,² in which the skin of the entire head represents 9 per cent of the body surface, each upper extremity 9 per cent, the front of the trunk 18 per cent, the back of the trunk 18 per cent, each lower extremity 18 per cent and the neck 1 per cent, making a total of 100 per cent.

Fluid is given in accordance with the

extent of the burn. The formula proposed by Evans² is effective and generally applicable. During the first twenty-four hours following injury, blood or plasma or both should be given intravenously in an amount equivalent to 1 cc. per kilogram body weight for each per cent of body surface burned. Whole blood is most satisfactory, both physiologically and because infectious hepatitis has a greater incidence of occurrence following the administration of pooled plasma. If enough blood is not available, dextran solution may be used in the ratio of 1½ to 2 parts of dextran to 1 part of whole blood. Dextran may be used also as a substitute for plasma, but the administration of whole blood is necessary in the significantly burned patient in a proportion of no less than 33 per cent of the total colloid-containing fluid to be given. Not over one liter of dextran solution should be administered in each twenty-four hour period.

The same amount of normal salt solution is given intravenously. In addition, a basic amount of 2,000 cc. of dextrose 5 per cent solution in distilled water is administered in all adult patients, to satisfy the basal requirements for body heat regulation and urinary output. Of this total calculated fluid requirement, one-half is given in the first eight hours following injury and the remaining half in the next sixteen hours.

During the second twenty-four hour period, half this amount of blood or plasma and an equal amount of normal salt solution are given, together with the same basic amount of two liters of dextrose 5 per cent solution in distilled water.

This method of estimation of fluid requirement² holds true for burns of up to 50 per cent of the body surface. In more extensive burns than this, or in patients over 50 years of age, the values calculated for burns of 50 per cent of the skin surface are employed. Less than the calculated value is given to patients suffering from cardiac, pulmonary, or renal disease, or from associated burns of the respira-

tory tract, in order to reduce the possibility of pulmonary edema.

When the amount of fluid to be given is large, as in a patient with burns of more than 25 per cent of the body surface, a plastic cannula is inserted into a suitable vein and a constant intravenous drip is established.

Proper regulation of fluid intake during the first two days is achieved by hourly observations of urinary tract output and by frequent determinations of the hemoglobin and hematocrit values. A Foley bladder catheter is introduced and the urinary output is maintained at 35 to 50 cc. per hour. If the secretion of urine varies above or below these limits, the proper correctional adjustments are made in the rate of administration of the intravenous fluids. The hemoglobin and hematocrit values are obtained at the time of admission before fluid administration is begun. These determinations are repeated every four to six hours while the patient is acutely ill and at less frequent intervals after the tendency to development of shock has decreased.

There is no substitute for close personal attention—the patient with burns of more than 25 per cent of the skin surface should be observed hourly during the first forty-eight hours of his hospital stay. After the second day, the fluid which has pooled at the sites of the burns is reabsorbed into the vascular system, and the patient's need for fluid decreases accordingly. At this time, most patients are able to take their basal fluid requirements by mouth, and determinations of the hemoglobin and hematocrit values will indicate if further transfusion is required.

Local treatment of the burn and treatment for actual or threatened shock are carried out simultaneously from the time of the patient's admission. At present, the use of pressure dressings is perhaps the most widely employed method of local management. The burned area is sponged gently with sterile normal salt solution under aseptic precautions, blisters and blebs are opened, desquamated skin layers

are trimmed away, the burned surface is flushed again with sterile normal salt solution, and dressings are applied. Sponging with soap is often advocated, but it is not necessary and it may cause pain and irritation of the burned surface. No antiseptics of any kind are employed since all bacteria on the wound surface cannot be destroyed, and infection will be likely to develop on the surface tissues devitalized by the antiseptic.

Several types of dressings are in use. The most commonly employed one unfortunately is a layer of coarse gauze heavily saturated with a thick layer of petrolatum or of Furacin ointment. Such material is entirely unacceptable. The heavy coating of grease will prevent evaporation of moisture from the healing second degree burns, will prevent drainage of exudate from sloughing or infected third degree burns, and will cause maceration of both undamaged and delicate regenerating skin. Much better is a single layer of fine mesh gauze (44 mesh or finer), either dry or impregnated with the thinnest possible film of unmedicated petrolatum. Probably best of all is the use of sterile white rayon or nylon cloth, with a weave fine enough to prevent adhesion even to a granulating surface and yet permeable enough to permit the passage of exudations from the injured surface into the overlying dressings. This cloth is best used dry or dampened simply with sterile normal salt solution.

The local application of powdered sulfonamides and antibiotics or of creams and ointments containing high concentrations of such drugs has been discontinued entirely in recent years, since too many reactions to these compounds have occurred, with both general toxic effects from excessive absorption of the drug and local destructive inflammatory responses on the burned surfaces.

After application of fine mesh cloth to the burn, a layer of flat or fluffed sterile gauze is applied as evenly as possible, then a layer of gauze pads to furnish bulk. The dressing is secured in place

gently with a sterile gauze bandage and wrapped firmly but not tightly with an elastic bandage. Pressure is equalized throughout the dressing; no hard wads of gauze and no tight turns of adhesive tape are permissible since these exert constant local pressure on the burned surface and may cause areas of pressure necrosis.

These dressings can be made up and sterilized beforehand, so that they can be unpacked and applied with no loss of time and with perfect efficiency. Such dressings protect the burn from further injury, afford comfort by providing protection from temperature changes and air currents, and permit epithelization under optimum conditions.

Minor burns of the face and neck are not dressed; extensive burns of these areas are dressed in the routine manner. Whenever it is necessary to include the eyes in a pressure bandage, a light layer of an ophthalmic ointment is applied to the eyes and care is taken that no eyelash is turned onto the cornea. Dressings can be removed, except for the deepest single layer of gauze, from burns of the head and neck after three days, and healing allowed to progress without an overlying dressing. When burns of the digits are dressed, fine mesh gauze or rayon and a thin layer of gauze dressing are placed between adjacent fingers or toes to prevent pressure of each digit upon its neighbor. The fingers and hand are dressed in the position of function. Splints may be applied to the extremities when necessary. These are seldom required because the relatively bulky pressure dressing exerts a satisfactory splinting effect.

Penicillin, either alone or in combination with streptomycin, is given parenterally in the usual dosage to those patients who are able to take these drugs. Others are given erythromycin orally as a satisfactory substitute. The routine use of antibiotics is discontinued after the first five days, since it is unlikely that invasive infections caused by organisms sensitive to these drugs will develop after this long a time, and since the organisms

remaining on the burn surface after this time are no longer susceptible to the effects of the drugs.

LATER MANAGEMENT

After seven to ten days, the patient is taken to the operating room and, under aseptic precautions including the use of masks and sterile gloves, dressings are removed down to the final layer of fine mesh cloth. The gauze is dry and clean over areas of second degree burn, is mottled slightly and adherent over areas of mixed second and third degree burn, and is wet and discolored over necrotic areas of third degree burn. The fine mesh gauze is removed only from areas to which it is not adherent, and fresh dressings are applied and allowed to remain for from four to seven days longer.

At the time of the next dressing, twelve to fourteen days after injury, the first and second degree burns have healed and the areas of full thickness burn slough usually are well demarcated. If such areas are present, general anesthesia is induced and the necrotic sloughs or eschars are excised with a sharp scalpel, the plane of excision passing through normal tissue just at the margins of the slough, a good line of cleavage usually being present. Little bleeding occurs as a rule, but if blood vessels of significant size are divided, they are suture-ligated with 5-0 silk or cotton. Bleeding usually can be controlled by pressure, sutures rarely being necessary. The raw surfaces are covered with a layer of fine mesh gauze or nylon, either dry or moistened, and a pressure dressing is again applied. No grease or ointment may be applied to the freshly debrided surface and no medication should be used locally at this time since a film would remain and would interfere with the proper growth of the skin graft when it is applied.

SKIN GRAFTS

On the following day, the patient is returned to the operating room, general anesthesia is induced, dressings are removed under aseptic precautions, and the raw areas are covered with thin split skin

grafts. These grafts are not applied at the time the slough is excised because slight oozing of blood or serum might lift the graft from the raw surface and prevent its growth, and because incomplete excision of the necrotic tissue might not be apparent at the time of debridement but would be obvious the next day. It is probably safer to suture the grafts in place with a running stitch of 5-0 silk around the margin, although this may be omitted if the pressure dressing is applied carefully. If the grafts are sutured, they must not be stretched or sutured under any tension at all, or the graft will fail to take. A skin graft that is not large enough to cover a defect is simply not large enough, and can not be stretched or pulled to fit. A layer of dry fine mesh gauze or nylon is laid over the graft and is moistened with sterile normal salt solution. No grease, ointment, or medication of any type is applied either to the gauze dressing or to the grafted surface. The usual pressure bandage is again applied.

Because such surfaces are always infected, the dressings should be changed after forty-eight hours. By this time, the grafted skin will have become adherent to the raw surface sufficiently to permit careful removal of the fine mesh gauze, irrigation and gentle sponging with warm sterile normal salt solution, removal of any sutures that may have been used, and redressing. On the other hand, if grease gauze has been used, the skin graft tends to become macerated and is much more likely to be dislodged when the dressing is removed. If the first dressing is postponed for more than forty-eight hours, some loss of the graft can be expected, particularly around the margins, from pockets of pus and collections of serum which lift the graft away from the raw surface and destroy its viability in scattered areas. Dressings are changed thereafter every twenty-four to forty-eight hours until the graft is solidly united and dry.

Because of the good blood supply to the skin of the face and neck, it is rarely

necessary to excise third degree burn sloughs from these areas, spontaneous separation usually occurring in two weeks. It is especially important to resurface raw areas on the face and neck as early as possible to prevent deformity, contracting scars, and impairment of function of such features as the eyelids. In the same manner, third degree burns involving the hands, feet, axillae, and joint regions must be cleaned and grafted with viable skin within two to three weeks from the time of injury.

It is unwise to wait for spontaneous separation of a burn slough or to delay debridement for more than three weeks at the most. Frequently, also, a granulating surface may become relatively clean and then an encouragingly rapid growth of epithelium may extend inward from all around its margins. It is tempting to allow this to continue in the hope that it will cover the area completely, but the growth soon slows and stops, the granulations lose their healthy red color and become pale, spongy, and dirty, and a dense layer of scar tissue forms beneath the surface. It is perhaps tempting then to apply various ointments or medications or to give the patient various drugs by mouth or by hypodermic injection in the hope that further epithelial growth will be stimulated. This never works; it simply gives more time for further scarring and fibrosis beneath the granulating surface, so that when the too long-delayed graft is finally applied, it is less likely to produce a sound and healthy skin covering, the scar is dense and thick, and the function and comfort of the involved area are permanently impaired. Granulating areas larger than 2 cm. in diameter should be grafted promptly; only areas which are smaller than this should be allowed to heal by spontaneous ingrowth of the epithelium from the edges, and then only if the margins are of normal full-thickness original skin. As Dr. J. Barrett Brown³ has emphasized, the skin is actually an organ, not simply a covering, and the thin epithelium which grows

outward from normal skin edges to cover over granulating areas is not full-thickness skin but is simply a thin layer of scar epithelium. Such epithelium, situated on a base of dense scar tissue, is fragile and sensitive and never gives a satisfactory functional result. This is true also of the epithelium that fills in the spaces between postage stamp grafts or pinch grafts, and detracts so greatly from the functional and cosmetic results of these types of grafts that it renders them thoroughly unsatisfactory in practically all circumstances. Very thin split-thickness grafts are taken from the donor surfaces, and if good care is taken to protect these regenerating areas, the same donor sites may be used two or even three times at intervals of perhaps three to four weeks. Donor sites from which pinch grafts have been taken will never regain a satisfactory cosmetic appearance and cannot be used later as a source of split-thickness grafts.

OLD INFECTED THIRD DEGREE BURNS

The problem of management of the old infected granulating third degree burn often arises, in which the patient is exhausted, debilitated and anemic. The areas of full thickness burn have deteriorated into surfaces of spongy, pale unhealthy granulations, covered with pus from which a multitude of bacteria of all types can be cultured. Usually these patients already have had every type of antibiotic that is available, and the infecting organisms consequently are resistant to every type of antibacterial drug. Often, too, skin grafts have been attempted, with indifferent success; and some of the surfaces are covered with spotty patches of epithelium, largely of the scar type, which is not really good enough to save but is allowed to remain in the hope that it will eventually cover the interspersed areas of infected granulations. Such surfaces are dressed repeatedly for weeks and months with little progress in epithelization but with much deposition of scar tissue beneath the surface, with permanent impairment of function and unsightly scarring.

General and local measures are both of

equal importance in the treatment of such patients, who have lost large quantities of protein from the body tissues. The blood volume and red cell mass must be restored to normal by transfusion of blood, full therapeutic doses of vitamins B complex and C are supplied, with at least 1,000 mg. of ascorbic acid daily, and a high protein diet is given. Although restoration of the blood volume and hemoglobin to normal will improve the patient's appetite, supplementary protein feedings usually will have to be added to the diet. One of the best available means is to give from 3 to 5 ounces of skim milk powder divided into several doses daily between meals, the powder being given either shaken up in water or stirred into liquid skim milk. This type of protein feeding is taken very readily by the patient and is of the greatest value in restoring his nutritional state to normal and in enabling him to grow skin when it is grafted upon a granulating surface.

At the same time, the granulating areas are cleaned by means of daily dressings with the use of dry fine mesh gauze or nylon next to the raw surface. Tub soaks to loosen the dressing before changing are not advisable, because new strains of bacteria are carried through the dressing to the burn surface, adding to the problem of surface infection. The dressings can be changed without pain to the patient simply by soaking them freely in sterile normal salt solution during removal, while coarse mesh gauze dressings cannot be removed without tearing the granulation tissue and causing pain and bleeding. Anesthesia is rarely necessary for change of dressings if rayon or nylon cloth is used. The use of antibiotics, either locally or generally, is unnecessary; within the space of five to seven days and simply by means of daily dressings alone, the surface infection is reduced sufficiently to permit definitive treatment. When the granulations appear clean and pink, the patient is given a general anesthetic, and debridement of the involved areas is performed down to a healthy base. At this

time, the irregular skin margin of the raw areas must be trimmed away, a sharp incision being made through normal skin, with sacrifice of the ragged edge, which is always undermined with pockets of pus and devitalized tissue that will cause necrosis and infection of the margins of the skin graft, with resulting delay in healing and with incomplete take. Split-thickness skin grafts are applied twenty-four hours later.

In these cases too, the grafted areas are dressed after forty-eight hours and at intervals of from twenty-four to forty-eight hours subsequently until full healing has occurred. If dressings are made less frequently, pus pockets will form and will cause patchy necrosis of widespread areas of the grafted skin.

Such frequent dressings require a great deal of time and attention, but for every hour that is spent on proper treatment during the first few weeks of the patient's illness, the doctor and the patient are saved many hours of time and trouble in subsequent weeks or months. Although much time-consuming attention is required daily, a clean burn can be healed with a great deal less time and trouble in its early stages than a dirty granulating old burn in a debilitated patient, which will still require the same daily attention, although for a far longer period and with a far less satisfactory result. It is worth repeating also that an unsatisfactory partial spotty take of a split-thickness graft, with a surface mottled with areas of infected granulations and patches of thin scar epithelium, is not worth saving but should be cleaned, excised in all areas not covered by sound skin, and grafted again.

SUMMARY

In summary, the following points may be emphasized:

1. The development of shock must be anticipated in every patient with significant burns and the proper steps taken to prevent it.

2. Whole blood and plasma or dextran, and crystalloid solutions in amounts calculated according to a safe formula are

given in the proper amounts during the first forty-eight hours following burn injury.

3. Adequacy of fluid administration during this time is checked by means of hourly urinary output measurement and frequent hemoglobin-hematocrit determinations.

4. Tetanus antitoxin or toxoid is given in all cases as indicated, appropriate antibiotics are given for the first five days after injury, following which time they are of little value, and large doses of vitamins B complex and C are given during the entire course of recovery.

5. Pressure dressings are applied after the burned areas are cleaned. The dressings are changed first after seven to ten days and again after four to seven days, at which time third degree burn sloughs are excised. The resulting raw surfaces are dressed and covered with thin split-skin grafts 24 hours later. Grafts are dressed for the first time 48 hours after application and at intervals of from one to two days thereafter until healed.

6. No coarse mesh gauze or dressing is ever applied directly to a burn, a granulating surface, or a fresh graft. Thick applications of grease and of antibiotic medications locally are not used. Fine mesh gauze, or preferably white rayon or nylon cloth, is preferred for application to the injured surfaces, either dry or with the barest minimum of sterile petrolatum.

7. Every effort is made to begin the resurfacing of full-thickness burns within two to three weeks after injury, with completion in the shortest possible practicable time. This is especially necessary in third degree burns of the face, hands, feet, genitalia, and in areas around joints.

8. Before skin grafting is done, specific attention is paid to the general nutritional status of the patient with particular reference to restoration of normal hemoglobin values and to a high dietary protein intake, as well as to the proper cleansing of the damaged surfaces.

9. Time spent in close attention to the burned patient in the early weeks saves

a great deal of extra time that would otherwise be necessary to spend in the future.

REFERENCES

1. Wallace, A. B.: The exposure treatment of burns, *Lancet* 250:500, 1951.
2. Evans, E. I., and others: Fluid and electrolyte requirements in severe burns, *Ann. Surg.* 135:804, 1952.
3. Brown, J. B., Fryer, M. P., Randall, P., and Lu M.: Postmortem homografts as "biological dressings" for extensive burns and denuded areas, (Discussion, p. 630). *Ann. Surg.* 138:618, 1953.

INDICATIONS FOR EXPLORATORY THORACOTOMY *

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Exploratory thoracotomy is a diagnostic procedure comparable to exploratory laparotomy. It may and usually does become a therapeutic procedure, but it should be considered one of the aids in the diagnosis of intrathoracic lesions. Such a procedure no longer requires justification since with modern anesthesia, blood replacement and an understanding of pulmonary physiology, the mortality and morbidity are surprisingly low. Hood at the Mayo Clinic reports a 1.3 per cent mortality in 156 patients and a very slight morbidity. An acceptable mortality to be considered is one below 3 per cent.

The clinically obscure pulmonary lesion is an indication for exploratory thoracotomy. These may be considered in the following categories: (1) Mediastinal tumors, (2) atelectasis, (3) diffuse pulmonary disease, (4) circumscribed lesions of the lungs.

FACTORS IN DIFFERENTIATION

Factors which may be of aid in differentiation of a pulmonary lesion are:

History—The presence or absence of symptoms in itself does not differentiate the lesion, but when present, symptoms are presumptive evidence of a more serious type of pathology. Hemoptysis in the

presence of a pulmonary lesion very often indicates a bronchogenic carcinoma, especially in males over fifty years of age.

In the evaluation of a patient with an obscure intrathoracic lesion the diagnostic studies should proceed without delay. If a diagnosis cannot be achieved within a reasonable time, then exploratory thoracotomy is to be considered. In a study of 100 consecutive clinically obscure pulmonary lesions, in which exploratory thoracotomy had been performed, Strug and Beuchner⁹ found 50 per cent to be malignant.

Roentgenologic Examination—It is usually by this means that the disease is found, but not identified. The erect PA of the chest will usually indicate the lesion, but special examinations such as lordotic views, over-penetrated views, stereograms and body section roentgenograms may be necessary. We feel that all patients with pulmonary lesions should have x-rays in both oblique and lateral views.

Bronchoscopy—While most patients with shadows in the lungs should have diagnostic bronchoscopy, the procedure is obviously of little value in the peripheral lesion or in the mediastinal tumor. Occasionally one may obtain either a positive cytological diagnosis by bronchial washings, where the sputum was negative or a bacteriological diagnosis.

Cytological Examination—The usefulness of this study depends on the interest of the pathologist in the Papanicolaou type of cytological staining. The study is a valuable one and those which are positive can no longer be construed as obscure. It is estimated that 60 to 70 per cent of bronchogenic carcinomas will exfoliate cells which will be found in either the sputum or the bronchoscopic washings.⁵

Bacteriologic Examination of Sputum—Acid fast studies of the sputum should be done routinely. Immediate smears, concentrates, and cultures should be performed. Also to be included are examinations for fungus diseases.

Scalene Node Biopsy—Since Daniels de-

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scribed this procedure in 1949,¹ it has become a valuable means both for diagnosis and prognosis. The basic concept is that the mediastinal lymph nodes extend directly into the nodes anterior to the scalenus anticus muscle. It is not necessary that the nodes be palpable in considering a scalene biopsy. The scalene fat pad is excised. In this will be found anywhere from two to twelve small lymph nodes. This is valuable in demonstrating metastatic carcinoma, lymphomas and Boeck's sarcoid. Our experience indicates a lower percentage of positive lymph nodes than that reported by Carr, and Shefts. We have had a recent experience with two patients who had circumscribed peripheral lesions of 3 cms. or less in size, both of whom had a positive scalene node biopsy for carcinoma.

Skin Tests—Intradermal skin sensitivity studies are usually of value in the negative sense. The tuberculin skin test is very rarely negative if the pulmonary lesion is tuberculosis. Those for coccidioidomycosis or histoplasmosis are not quite as important in this negative phase since active lesions of these fungous infections occur with negative skin tests.

SPECIFIC CATEGORIES TO BE CONSIDERED

Mediastinal Tumors—It is rare to be able to diagnose the specific type of lesion when one is confronted with a mediastinal tumor until exploratory thoractomy is performed. If one sees dentigerous elements in the plain or body section roentgenograms, the diagnosis of dermoid cyst is fairly acceptable. While generalities may be made as to the frequency of different types of tumors in each mediastinal compartment, this is not dependable. In a survey of mediastinal tumors, excluding lymphomas, by Peabody, Strug and Rives⁷ the locations and percentages noted were as in Table 1.

Lymphomas, which include lymphosarcomas and Hodgkin's disease, are predominantly anterior mediastinal lesions and may present on either or both sides of the anterior mediastinum. Here scalene node biopsy may make the diagnosis.

TABLE 1
MEDIASTINAL TUMORS

Tumors of the anterior mediastinum:	
Teratoid tumors	20.3%
Thymomas	10.5%
Thyroid adenomas	6.9%
Pericardial coelomic cysts	6.2%
Lipomas	2.0%
Lymphangiomas	1.3%
Tumors of the Posterior Mediastinum:	
Neurogenic tumors	30.6%
Enterogenous cysts	1.1%
Tumors without strong anteroposterior locations:	
Bronchogenic cysts	9.9%
Fibromas	3.7%
Nonspecific cysts	3.4%
Hemangiomas	1.7%

Whether or not the tumor presents predominantly on one side or on both of the mediastinum, we feel that exploratory thoractomy is indicated to establish a histological diagnosis. We no longer feel that a trial of x-ray therapy is justified in such lesions, because of the importance of the specific type of lesion in considering therapy.

Atelectasis—The demonstration of atelectasis by x-ray is evidence only of bronchial obstruction. Unfortunately there are cases of atelectasis which closely resemble atypical pneumonia. If the lesion is lobar in nature, bronchoscopy may lead to an early diagnosis when the clinician is alert to the likelihood of bronchogenic carcinoma. Other lesions which are likely to be manifested by atelectasis are adenoma, foreign body, tuberculous bronchitis, nonspecific granuloma, stenosis of a bronchus, nonspecific pneumonitis and extrinsic pressure on the bronchus. Bronchography can demonstrate the block beyond the reach of the bronchoscope, but cannot give an etiological diagnosis. If segmental atelectasis persists, it is important to consider exploratory thoractomy since the incidence of bronchogenic carcinoma is so high. Grow and his associates³ found carcinoma to comprise 31 per cent of the cases of bronchial obstruction.

Diffuse Pulmonary Disease—Within recent years inability to establish a positive diagnosis in some of the diffuse pulmo-

nary diseases, even with our many refined diagnostic measures, has become quite apparent to the majority of individuals interested in pulmonary pathology. These constitute a fairly large number, such as Boeck's sarcoidosis, interstitial pulmonary fibrosis, pneumoconiosis, bagassosis, lymphangitic carcinoma, metastatic carcinoma, and pulmonary adenomatosis.

It is obvious from the roentgenologic characteristics that these diseases cannot, in the majority of instances, be differentiated. The type of prognosis that can be given in such cases depends largely on the accuracy of the histological diagnosis.

With the attendant low mortality and morbidity in exploratory thoractomy, the risk of entering a thorax and obtaining a biopsy of the pulmonary parenchyma or pleura is negligible. In fact, even in poor risk cases this procedure can be performed under local anesthesia without undue risk.

On our services exploratory thoractomy for diffuse pulmonary disease is being performed with increasing frequency, and up to the present date with no mortality and minimal morbidity.

Circumscribed Pulmonary Lesions (Coin)—These present our most difficult problem as to the differentiation of an x-ray shadow presenting as a spherical nodule. The term coin is erroneous in that it implies a two dimensional lesion. Actually most of these are more or less spherical in shape. They comprise the following lesions: bronchiogenic carcinoma, sarcoma, bronchial adenoma, metastatic tumors, tuberculomas, histoplasmonas, hamartoma, bronchogenic cyst, coccidioidal granuloma, mesothelioma, lipoid granuloma, A-V aneurysm, and hemangioma.

The difficulty in evaluating these lesions is enhanced by the numerous discrepancies in the literature. Some have stated that small nodules may be ignored, that calcification denotes a benign lesion, that the degree of density may be used to differentiate a benign granuloma from a carcinoma. The statistical evidence is overwhelming that such criteria for differentiation are unreliable, and that explora-

tory thoractomy is necessary. Davis, Peabody, and Katz² studied 215 such nodules and found 29.7 per cent were carcinoma. Actually 36.7 per cent were malignant. Hood et al⁵ from the Mayo Clinic studied 156 cases and found 35.3 per cent malignant. Higginson and Hinshaw⁴ found it to be 10.3 per cent in a small series. All agree that solitary lesions of the lung should be treated in the same manner as a mass in the breast. A biopsy must be considered in order to rule out carcinoma.

DIAGNOSTIC CONSIDERATIONS

In the diagnostic considerations to differentiate bronchogenic carcinoma from other lesions, the following factors were evaluated.

1. *History*—This is unlikely to be of any help, unless there is a history of a previous carcinoma elsewhere in the body. Even if the patient had a primary malignancy treated prior to the discovery of the lung mass, one cannot rule out a second primary carcinoma. It is also to be realized that the patient with carcinoma is susceptible to multiple carcinoma, and many reports indicate two or more simultaneous malignancies in the same individual. The diagnostic error may be compounded if one follows the rule that all signs may be explained on the basis of one disease.

2. *Skin Tests*—While it is true that the tuberculin test is quite reliable, we can hardly relate a positive skin test to the specific pulmonary nodule. If the skin test is negative, it is even more urgent to consider the lesion malignant.

3. *Bacteriologic Examination of Sputum*—The solitary tuberculomas rarely produce acid-fast bacilli in the sputum and one cannot depend on this study. It has also been shown that false positives do occur. The concomitant finding of tuberculosis and carcinoma occurs with sufficient frequency to confuse the diagnostic picture. One must be constantly alert to this fact in treating patients with known pulmonary tuberculosis.

4. *Cytology*—A negative report is completely unreliable and a positive report

indicates the need for a therapeutic approach. McBurney⁶ in a report from the Mayo Clinic on 29 cases of asymptomatic bronchogenic carcinoma found negative results in 20 of 23 cases studied. Subsequent studies have revealed a higher percentage of positive results particularly in those having squamous cell carcinomas.

5. *Bronchoscopy*—Because of the peripheral nature of these lesions, little can be expected from bronchoscopy. Occasionally one will be able to biopsy such a lesion, or positive cytology may be obtained in bronchial washings. Bronchoscopy proved negative in 20 of 22 cases of asymptomatic carcinoma.⁶

6. *Roentgenologic characteristics*—Size. In Hood's⁵ report, no bronchogenic carcinoma was found measuring less than 2 cm. in diameter. On the other hand, 60 per cent of the granulomas were 2.5 cms. or less in diameter. Davis and his associates² found 3 bronchogenic carcinomas which were 1 cm. or less in diameter when originally detected; 29 were 3 cm. or less and 41 were between 3 to 5 cms. Size is no criteria of a benign lesion.

7. *Umbilication*—Rigler⁸ reported notching of the nodule, a new roentgen sign of malignancy in the solitary pulmonary nodule whether on the conventional film or in the planigrams, invariably meant carcinoma. This only serves to emphasize the urgency of exploratory thoractomy. What is needed, is a reliable sign which would indicate a benign lesion. There is no such sign.

8. *Calcification*—This is a sign which is constantly debated. Hood⁵ reports calcification in 32 per cent of the granulomas and 28 per cent of hamartomas and none in carcinoma. In the calcium free group 20 per cent were bronchogenic carcinoma, 8 per cent bronchial adenomas, and 14 per cent metastatic malignancy. However, there are reports indicating that this is not reliable (Davis and Peabody).² In a poll of the members of the American Association for Thoracic Surgery by Davis, 114 members of 328 had encountered a malignant solitary pulmonary nodule

containing calcium. Almost all thoracic surgeons agree that punctate calcification of a spotty nature does not rule out bronchogenic carcinoma. Concentric laminations of calcium in a pulmonary nodule is the only reliable sign of a benign lesion. This occurs only in tuberculosis or histoplasmosis. Minimal calcification is not an indication for non-surgical therapy.

CONCLUSIONS

Exploratory thoractomy as a diagnostic procedure is comparable to exploratory laparotomy.

The indications for exploratory thoractomy are evident in clinically obscure lesions of the lung. These comprise the following categories: mediastinal tumors, atelectasis, diffuse pulmonary disease, and circumscribed lesions of the lung.

The deficiencies in history, roentgenological examinations, bronchoscopy, cytological examinations, bacteriologic examinations, and scalene node biopsy are pointed out in attempts at establishing a positive diagnosis, which further emphasizes the value of exploratory thoractomy.

The difficulties in diagnosing mediastinal tumors are readily apparent, and the value of exploratory thoractomy both as a diagnostic and therapeutic procedure is demonstrated.

Atelectasis in itself is only an indication of bronchial obstruction and is not a definite disease entity.

The value of positive information in diffuse pulmonary disease is demonstrated by exploratory thoractomy, particularly in relation to prognosis.

The various problems in differentiation of circumscribed pulmonary lesions can be resolved by exploratory thoractomy. The incidence of malignancy in this type of lesion is as high as 49 per cent in reported series. Thus it is obvious that exploratory thoractomy is both of diagnostic and therapeutic value. In carcinoma localized to the lung, five year survival rates have been reported as high as 36 per cent. It is only by exploratory thoractomy of the clinically obscure lesions of the lung that we can increase the number of curative

resections in bronchogenic carcinoma.

REFERENCES

1. Daniels, A. C.: A method of biopsy useful in diagnosing certain intrathoracic diseases, *Dis. Chest* 16:368, 1949.
2. Davis, E. W., Peabody, J. W., Jr., and Katz, S.: The solitary pulmonary nodule, *J. Thoracic Surg.* 32:728, (Dec.) 1956.
3. Grow, J. B., Bradford, M. L., and Mahon, H. W.: Exploratory thoracotomy in the management of intrathoracic disease, *J. Thoracic Surg.* 17:480, 1948.
4. Higginson, J. F. and Hinshaw, D. B.: Pulmonary coin lesion, *J.A.M.A.* 157:1607, 1955.
5. Hood, R. T., Good, C. A., Clagett, O. T., and McDonald, J. R.: Solitary circumscribed lesions of the lung, *J.A.M.A.* 152:1185, 1953.
6. McBurney, R. P., Kirklin, J. W., and Hood, R. T.: Asymptomatic bronchogenic carcinoma, *Ann. Surg.* 141: 84, 1955.
7. Peabody, J. W., Strug, L. H., and Rives, J. D.: Mediastinal tumors, *Arch. Int. Med.* 93:1, 1954.
8. Rigler, L. G.: A new roentgen sign of malignancy in the solitary pulmonary nodule, *J.A.M.A.* 157:907, 1955.
9. Strug, L. H. and Buechner, H. A.: The management of clinically obscure intrathoracic lesions, *Am. Surg.* 20: 506, 1954.

CARCINOMA OF THE CERVIX AMONG RESIDENTS OF EAST BATON ROUGE PARISH: 1. INFLUENCE OF SELECTED FACTORS ON MORBIDITY * †

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In studying the epidemiological aspects of cancer of the uterine cervix, comparisons must be made between persons having the disease and those not having it in the same population. Data concerning the race, age, marital status, and parity of persons with carcinoma of the cervix indicate nothing regarding pathogenesis of disease until these factors in the affected

persons are compared with the distribution of the same factors in the general population of that area.

This report will deal with the influence of race, age, marital status and parity upon the occurrence of carcinoma of the cervix. It will also show the rate of appearance of this disease in a population. An idea of the rate of occurrence is not altogether of academic interest. The knowledge is necessary in estimating the effectiveness of cancer detection measures and is the starting point in weighing the profit in cancer prophylaxis and treatment. A study of the stage of the disease—both early and late—can give information on the pathogenesis of carcinoma. These questions, then, will be considered regarding this illness: Who is affected by this disease? What is its extent in the population? Can we identify some of the factors influencing its development?

METHOD OF STUDY

The methodological procedures in this report are based on an assumption which from every angle of consideration seems warranted: East Baton Rouge Parish is a fairly large, populous area with a self-contained medical establishment. Nearly all instances of the disease occurring in this population are managed in Baton Rouge and in one other medical facility, Charity Hospital in New Orleans. When diagnosis only is considered, the above observation seems even more sound. It is necessary, therefore, only to analyze the population make-up and to tabulate factors in the disease in question in order to make valid observations on this disease.

Population data were prepared by the Department of Sociology (Institute of Population Research) of Louisiana State University from census figures of East Baton Rouge Parish and the State of Louisiana. Comparisons were made using projections of the population make-up as of January 1, 1954, as this study includes disease diagnosed in the years 1951 through 1956.

Data on the disease under study were

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obtained from the Pelvic Tumor Registry at Our Lady of the Lake Hospital. The Registry was organized by the Baton Rouge Obstetrical and Gynecological Society. A committee was named by the society consisting of two of its members and two pathologists, one from each of the two Baton Rouge hospitals, to set policies and supervise operation of the registry. By consent of all the practicing physicians in the area, every instance of tumor of the female genital organs is recorded in the registry. The operation of the registry is made possible by financial support from the Louisiana Division of the American Cancer Society.

In a further effort to find additional instances of cervical cancer, the death certificates of residents of East Baton Rouge Parish were examined for cancer deaths where the disease had not previously been under medical surveillance. These would be cases presumably where the person affected had not consulted a physician for the illness until the terminal stage was reached. A report from the National Cancer Institute¹ indicates this method of search produced a significant part of all the recorded instances of cancer disease in New Orleans in 1947, 12.5 per cent of the cases. In order to guard against duplication in tabulating total cases, only those cases listed as not recorded prior to death were collected. Their names were then checked against those of patients listed in the Baton Rouge Pelvic Tumor Registry and those of patients admitted to Charity Hospital from this parish.

RESULTS OF THE EAST BATON ROUGE STUDY

Race Factor: Many authors have reported²⁻⁷ that carcinoma of the cervix is more frequent among Negroes, whereas white persons develop more cancers of all sites taken together. For the most part these studies take three forms. Cause of death at autopsy is tabulated in hospital patients and each cause is shown as a per cent of the total, in white and Negro patients. the statement can be made from this type of study: “. . . the percentage of all can-

cer deaths in the white race is significantly greater . . . than that in the Negro race *in this series of autopsies.*”² (Italics are ours.) This fact may not be extrapolated to the general population. It is true only for *that series* of autopsies. In another type of report, notably those emanating from the Public Health Service,¹ the analysis is made of data reported to that agency by individual physicians and institutions. Two types of errors can and do occur, omissions and mistakes in diagnosis. However, the large numbers of observations tend to minimize errors of collecting and recording. But in Louisiana, at least, much persuasion must still be done if cancer occurrence is to be accurately reported as a vital statistic by physicians. A third type of report, one which may give a false impression of racial incidence, is that in which a series of cases diagnosed and treated at a given hospital is divided into white and non-white groups. Most authors³⁻⁵ reporting this type of study simply cite the ratio of white to Negro patients in those series; however, the reader is tempted to draw the unwarranted conclusion that the ratio holds for the occurrence of the disease in the general population.

In a comprehensive study on this particular question, Warren analyzed 183 cases of carcinoma of the cervix and noted, “Although the nonwhite female rates for . . . cervix uteri were greater than the white rates, the difference [was] not statistically significant.”¹

In the material comprising this report there were 101 instances of cervical carcinoma among white persons and 71 instances among Negroes, a total of 172 cases. Table 1 shows the means by which these cases became known. Table 2 shows the actual number of cases by age group and race. The significant finding is disclosed by the calculation of rates of occurrence by race. There is a definitely higher rate of occurrence in the Negro population than in the white. Figure 1 depicts this fact graphically. There were 34.2 cases of disease per 100,000 nonwhite

TABLE 1
SOURCES OF NEWLY DIAGNOSED CASES OF
CARCINOMA OF THE CERVIX, EAST BATON
ROUGE PARISH, 1951-1956

Year	Total	Private Patients	Charity Hosp. Patients	Death Certificate
1951	23	9	11	3
1952	32	10	15	7
1953	34	13	21	—
1954	24	14	6	4
1955	28	20	8	—
1956	31	22	6*	3*
Total, 1951-1956	172	88	67	17

* Estimates based on data available for first half of year.

TABLE 2
INSTANCES OF CARCINOMA OF THE CERVIX,
BY AGE AND RACE, EAST BATON ROUGE
PARISH, 1951-1956

Age	Total	White	Nonwhite
0 - 19	2	—	2
20 - 29	6	3	3
30 - 39	32	12	20
40 - 49	41	29	12
50 - 59	35	25	10
60 - 69	30	17	13
70 & over	26	15	11
Total			
All Ages	172	101	71

females and 25.2 per 100,000 white females. It does not come within the scope of this report to deal with the reasons for this difference, but only to note that it does exist.

Age Factor: Cancer of the cervix is, naturally, a disease of older persons. But one would wish to know further at what age it occurs most frequently, and whether a woman can "live through" the cancer age, emerging in an era where she would be less likely to have the disease. Is it simply that the older she becomes, the

more likely she is to develop cancer of the cervix?

The experience of others would tend to show that there is a predominance of the disease in the forties and fifties. Robinson³ in a study not subjected to comparison with population normals states that the peak occurrence is in the fifth decade. Truelson⁷ in an exhaustive, highly scientific analysis of age morbidity in 2,918 cases of cancer of the cervix found maximum occurrence in the 45 to 49 year age group. Further, he compared the number of persons having cancer in each age group with the number of females in each age group in the general population, noting that cancer of the cervix occurred 5 times as frequently in the 45 to 49 year group as in the 25 to 29 year group of females; and that it was 3 times as common in the peak age group as in females over 80 years of age.

Age specific morbidity rates presented in Table 3 disclose that in the East Baton

TABLE 3
ANNUAL RATE OF OCCURRENCE OF CARCINOMA
OF THE CERVIX (CASES PER 100,000 FEMALE
POPULATION), BY AGE AND RACE, EAST
BATON ROUGE PARISH, 1951-1956

Age	Total *	White	Nonwhite
0 - 19	0.9	—	2.5
20 - 29	4.7	3.4	7.7
30 - 39	32.5	17.9	63.3
40 - 49	57.6	61.3	50.3
50 - 59	79.9	85.5	68.8
60 - 69	105.0	98.7	114.6
70 & over	147.4	133.7	171.5
Total			
All Ages	28.3	25.2	34.2

* Based on 172 cases of disease.

Rouge Parish study there was a steady increase of occurrence with advancing age. Although at variance with other studies, there is no doubt about the statistical significance of this observation. Figure 2 effectively portrays this relationship between occurrence and age.

Marital Status: Logan⁸ reports from a statistical study in England that "marital status alone, apart from child bearing, seems to be a factor in high mortality [from cancer of the cervix]." The study of Wynder⁶ revealed that multiple mar-

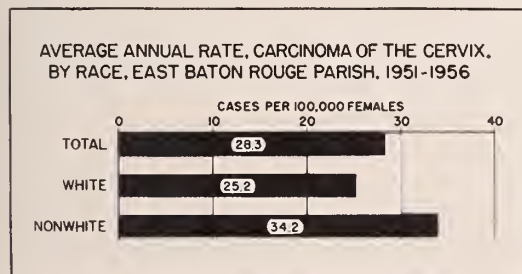


Figure 1.—There is a significantly higher rate of occurrence among the Negro than among the white population.

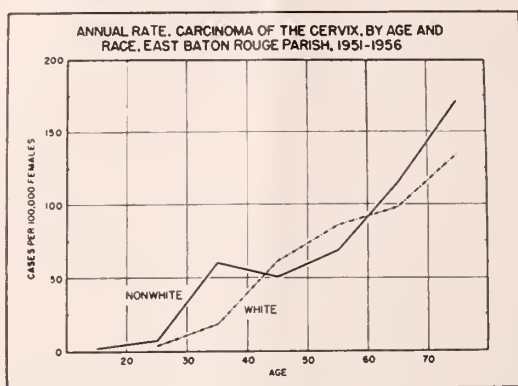


Figure 2.—The incidence of carcinoma of the cervix increases steadily with age.

riages increased the risk to the woman of developing cervical cancer, as did early marriage. But that marriage, coitus, and childbirth are not the only factors involved in genesis of squamous cell carcinoma of the cervix was brought out by Towne,⁹ who found 6 instances of the disease in a survey of approximately 13,000 celibate women. Truelson's⁷ study showed a somewhat higher morbidity among single women older than 60 years and among separated and divorced women in the respective age groups. It is likely that some factor producing artificial selection accounted for these unexpected and curious findings in Truelson's material.

There are several basic difficulties encountered in evaluating the effect of marital status in the East Baton Rouge study. The prevalence of common law marriages must be considered with accompanying instability of status. There should be due note of the influence of parity and age among married and unmarried persons. And, of course, the factor of pregnancies ending in abortion should be weighed.

The number of instances of carcinoma in the East Baton Rouge Parish study is not large enough to be divided into marital status by age. Hence the disease groups including all ages are compared with population groups of all women 14 years of age and over. This modification makes the "single" category of the control group smaller by eliminating those females who would be expected not to be married because of young age. Census figures are

available for this comparison, whereas there are none for marital status in the respective decades of age.

Using the patients' own statement of marital status, Table 4 shows the rate of

TABLE 4
ANNUAL RATE OF OCCURRENCE OF CARCINOMA OF THE CERVIX (CASES PER 100,000 FEMALE POPULATION, 14 YEARS OLD AND OVER), BY MARITAL STATUS AND RACE, EAST BATON ROUGE PARISH, 1951-1956

Marital Status	Total *	White	Nonwhite
Single	4.8	3.7	6.8
Ever Married	38.3	35.2	46.3
Married	39.4	32.1	55.6
Wid. or Div.	32.9	55.2	23.8
All Females	39.1	34.5	48.0

* Based on 141 cases of disease for which marital status is known.

disease per 100,000 females in the categories "single," "married," "widowed or divorced," and "ever married." The principal comparison, between single and ever married, shows an eightfold greater incidence among those married. (Fig. 3) It

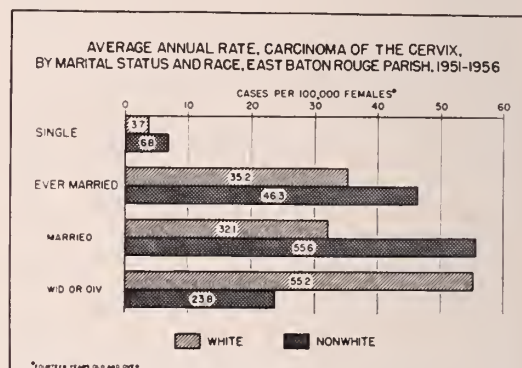


Figure 3.—Married women 14 years old and over develop about eight times as many cervical cancers as single women in the same age group.

is apparent that in the younger age groups there will be more single females and less disease, while in the older groups there will be fewer single females and more disease. However, the magnitude of the difference in rates is sufficient to offset this fact and still remain meaningful.

Parity: Most reports on significance of previous pregnancies in etiology of carcinoma tabulate the number of women having cancer who are parous and the number who are nulliparous. Few authors have attempted to relate these data to the

corresponding breakdown of the total population. Hinselmann¹¹ calculated a theoretical normal ratio of parous to nulliparous individuals by devious assumptions. He estimated there were 3.2 mothers to each nullipara in the population, and he found the same comparison to be 21 to 1 in patients with cancer of the cervix. Again Truelson, measuring this variable, made careful computations to find the number of nulliparae in a group of healthy females in the same age groups as the patients with cervical carcinoma. He concluded that among 1,000 healthy women of ages corresponding to those of the patients with the disease in question there were 30.6 per cent who had never borne children. Although this normal figure included some women who had had abortions, it is significantly higher than the proportion of nulliparae among his cancer patients, which figured 8.1 per cent. In determining the influence of the number of pregnancies and comparing cancer patients to normal females Truelson noted, "These figures speak against a causal relationship between the number of pregnancies and occurrence of carcinoma of the cervix."⁷ And, again: "... it is the first pregnancy—and presumably in particular its termination—which is of significance to the occurrence of cervical carcinoma, whereas the number of pregnancies is of no importance."⁷

The Registry material does not contain enough cases of cancer of the cervix at this time to determine disease rates in age groups by number of pregnancies. Also, our basic population data do not provide for a tabulation of number of pregnancies in parous women. The analysis was made simply of parous and nulliparous females with cancer per 100,000 females, 14 years old and over. This information is set forth in Table 5.

According to these rates, proportionately four times as many parous as nulliparous women in East Baton Rouge Parish have carcinoma of the cervix. An interesting observation here is that among nulliparous women ever married there was

TABLE 5
ANNUAL RATE OF OCCURRENCE OF CARCINOMA OF THE CERVIX (CASES PER 100,000 FEMALE POPULATION, 14 YEARS OLD AND OVER), BY PARITY AND RACE, EAST BATON ROUGE PARISH, 1951-1956 *

Parity	Total †	White	Nonwhite
Parous	22.4	22.9	21.3
Nulliparous	5.7	6.0	5.1
Ever Married	8.0	8.7	6.9
Single	3.6	3.7	3.4

* Estimates of women ever married with no children are based on 1950 census figures for the State of Louisiana.

† Rates are based on the 72 cases (63 parous and 9 nulliparous) for which parity is known. Two (2) of the parous cases were not identified by race.

a higher rate of disease than among single nulliparae. The difference is seen in both white and nonwhite women. (Fig. 4). Since the parity factor does not exert its influence in this comparison, this finding adds greater validity to the conclusion drawn from Table 4. The inference here is that marriage itself has a positive effect upon development of cancer of the cervix.

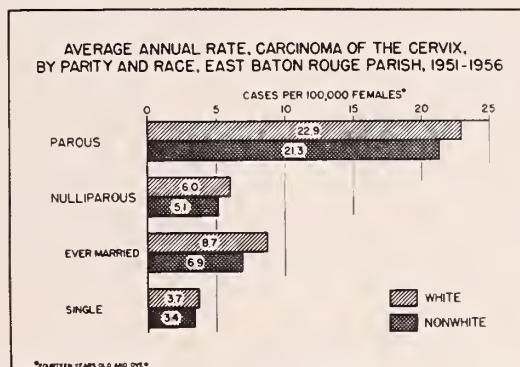


Figure 4.—Rate of occurrence in parous females over 14 years old is four times that in nulliparous females of same age. Among nulliparous married females 14 years old and over, there is twice as much cancer as among single nulliparous women of the same age group.

CONCLUSIONS

1. A study of all known instances of carcinoma of the uterine cervix in East Baton Rouge Parish during the period 1951 through 1956 has been made. There were 172 diagnosed cases.

2. The rate of occurrence is 28.3 cases per 100,000 female population. The rate of occurrence in nonwhites is 34.2. This is significantly higher than the rate of 25.2 in white females.

3. There is a steady increase in rate of occurrence of disease with increasing age—a finding at variance with other research, but found to be significant in this study.

4. Carcinoma of the cervix is proportionately almost eight times as frequent in married women as in single women over 14 years old.

5. Carcinoma of the cervix is approximately four times as prevalent among parous as among nulliparous women.

REFERENCES

1. National Cancer Institute: Cancer Illness—Cancer Morbidity Series, Numbers 1-10, Bethesda, Md., 1950-1952, National Institute of Health, United States Public Health Service, Cancer Morbidity series No. 1.
2. Kirchoff, Helen, and Rigdon, R. H.: Frequency of cancer in the white and Negro: A study based upon necropsies, *South. M. J.* 49:834, 1956.
3. Robinson, B. W.: Malignancy in the Negro, *Am. J. Roent.* 66:783, 1951.
4. Cuff, J. R. and Quinland, W. S.: Primary carcinoma in the Negro, *Arch. Path.* 30:393, 1940.
5. Hynes, J. F.: Cancer of cervix; Review of 296 cases, *Am. J. Roent.* 60:368, 1948.
6. Wynder, E. L., et al.: A study of environmental factors in carcinoma of the cervix, *Am. J. Obs. & Gyn.* 68:1016, 1954.
7. Truelson, F.: Cancer of the Uterine Cervix. English Trans. H. K. Lewis and Co., Ltd., London, 1949.
8. Logan, W. P.: Marriage and childbearing in relation to cancer of the breast and uterus, *Lancet*. 2:1199, (Dec. 5) 1953.
9. Towne, Janet E.: Carcinoma of the cervix in nulliparous and celibate women, *Am. J. Obs. & Gyn.* 69:606, 1955.
10. Dunn, John E., Jr.: The relationship between carcinoma in situ and invasive cervical carcinoma. A consideration of the contributions to the problem to be made from general population data, *Cancer*. 6:873, 1953.
11. Hinselmann: Quoted in Truelson, F.: Cancer of the Uterine Cervix. English Trans. H. K. Lewis and Co., Ltd., London, 1949.

SUBACUTE BACTERIAL ENDOCARDITIS: DIAGNOSIS, TREATMENT AND PROGNOSIS *

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Subacute bacterial endocarditis is a disease which physicians have been generally aware of for only thirty-five years. Marked interest developed concerning this disease following the discovery of antibiotics. Recent reports have added valuable data to the clinical picture and treatment.

A brief review of the literature, with comments on the diagnosis, treatment, and prognosis of bacterial endocarditis will be presented.

CLINICAL FEATURES

I shall discuss this under three headings: (1) general symptoms, (2) signs and symptoms secondary to embolism, and (3) cardiac manifestations.

1. General Symptoms:

The onset of subacute bacterial endocarditis is usually insidious but may be acute. The common symptoms listed in their approximate order of frequency are fever, malaise, weakness, lassitude, joint and muscular pains, loss of weight, sweats, chills, and anorexia.

Fever is almost always present. It is irregular and is usually under 103 degrees but in some cases may be high with chills. Patients with bacterial endocarditis may have afebrile periods lasting for days or weeks. This is seen most frequently in patients with bacterial endocarditis of long duration with advanced renal complications. It is also seen in patients who have been treated with only suppressive doses of antibiotics.

In about one-third of the cases the onset of bacterial endocarditis is sudden, marked by fever, chills, and sweats, or by arthritis, or by embolic manifestations such as hemiplegia, Osler's nodes, splenic and renal infarction.

2. Signs and Symptoms Secondary to Embolism:

The embolic symptoms are most specific for this disease. Embolic episodes occur at some time in the majority of the cases. It may occur at the onset but usually occurs later. The clinical findings are varied and are dependent on the location of the occluded vessel. The spleen, kidney, and brain are the organs frequently involved, in that order.

The spleen is palpable in about two-thirds of the cases with embolic involvement being most often the cause. The symptoms of splenic infarction may or may not be present.

Renal emboli occur in about 50 per

* Presented at meeting of the Louisiana Heart Association, in Shreveport, La., May 15, 1957.

cent of the cases. Again symptoms may or may not be associated.

With cerebral emboli, neurological manifestations are frequently evident. Various workers state that central nervous system symptoms, secondary to embolic disease, are present in about 15 to 25 per cent of the cases. This aspect of the disease may be so outstanding at the beginning that many of these patients are first admitted to neurosurgical or neuropsychiatric services. The most frequent signs and symptoms associated with cerebral emboli are speech difficulties, vomiting, confusion, tremor, hemiplegia, reflex changes, and cranial nerve palsies.

Pulmonary emboli occur primarily in patients with congenital heart disease who have vegetative lesions on the right side of the heart.²⁹

The incidence of retinitis with petechial lesions³⁰ varies between 3 and 20 per cent. Embolism of the central retinal artery has been estimated to occur in 2.5 per cent.³ Petechiae involving the skin and mucous membranes occur in the majority of cases.²⁹

Osler's nodes and splinter hemorrhages under the nails are frequently seen. There is some debate as to whether or not the latter are of embolic origin.

3. *Cardiac Manifestations:*

The cardiac signs and symptoms are dependent on the severity of the basic heart disease and the degree of involvement of the heart by the endocarditis. A significant murmur is present in 99 per cent of the cases.^{3, 12, 30} A mitral systolic murmur is the most common. The changing character of murmurs has been overemphasized.¹⁷ New murmurs may develop. By far the most common is the appearance of an aortic diastolic murmur.

Subacute bacterial endocarditis usually occurs in patients with compensated heart disease.² The incidence of congestive heart failure increases with the duration of the disease. The onset of congestive heart failure is usually gradual but may be sudden as a result of rupture of the aortic valve or chorda tendineae.

PHYSICAL FINDINGS

Fever and a heart murmur are almost always present. Splenic enlargement and petechiae occur in 50 to 65 per cent of the cases. Clubbing of the fingers is frequently present. Various workers give an incidence of 35 to 70 per cent.^{3, 12, 29} Osler's nodes have been noted in 28 to 50 per cent.^{3, 12, 30} Neurological findings are present in 15 to 25 per cent. Joints may be hot and swollen in about 10 per cent. Signs of cardiac failure occur in about 10 per cent.

LABORATORY FINDINGS

Mild hypochromic normocytic anemia is usual but it may be marked in the advanced cases. White cell count is normal or slightly elevated. Monocytes may be increased. Phagocytic cells have been noted in the peripheral blood.

Urinary findings: Microscopic hematuria occurs in 50 to 80 per cent of the cases.^{3, 12, 30} Albumin, white cells and casts are frequently seen.

Bacteremia: Positive blood cultures occur in 75 to 90 per cent of the cases.^{1, 2}

Cerebrospinal fluid abnormalities may be present in cases with cerebral emboli. *Generally Accepted Views on Blood Cultures:*

The blood cultures need not be taken at any special time.

A total of five or six blood cultures, collected over a two to three day period is sufficient in the study of a case suspected of having bacterial endocarditis.

Blood should be inoculated on aerobic and anaerobic media. Avoid adding an excessive amount of blood to the culture media since enough natural antibacterial substances may be present, sufficient to interfere with the growth of the bacteria. Venous blood is satisfactory. Cultures should be kept for at least three weeks before they are considered negative.

The physician should have personal contact with the laboratory.

Bone marrow cultures are rarely indicated.

Negative Blood Cultures:

Negative blood cultures occur most fre-

quently in (1) bacterial endocarditis involving the right side of the heart, (2) advanced complicating renal disease, (3) cases who have received antibiotics previously when the disease was not recognized, and (4) in cases in which the enterococcus is the causative agent.^{9, 10, 17}

DIAGNOSIS

It is very important that an early diagnosis be made. Subacute bacterial endocarditis must be considered as a serious possibility when a patient with a heart murmur presents with unexplained fever of more than one week.

The classic criteria for the diagnosis of subacute bacterial endocarditis are (1) fever, (2) valvular or congenital cardiac lesion, (3) embolic or vascular lesion, and (4) positive blood culture.

Insistence on the last two criteria accounts for most of the instances of delay in diagnosis and treatment.¹²

The clinical picture of subacute bacterial endocarditis may be so characteristic that the condition can be diagnosed by history and examination alone. The presence of fever, heart murmur, petechiae, splenomegaly, and hematuria allow one to make a diagnosis of subacute bacterial endocarditis immediately.

Sometimes there is a history of tooth extraction or a respiratory infection, two to four weeks prior, to the onset of the symptoms.

One should think of bacterial endocarditis in anyone with congenital or rheumatic heart disease who has unexplained anemia, fever, or heart failure.

While it is easy to describe the signs and symptoms which make up the typical picture of bacterial endocarditis, it is more difficult to state just exactly what are the minimum findings necessary for a diagnosis of this disease.

In some cases, after a complete work-up, only two positive findings, an organic heart murmur and unexplained fever of more than one week, are found. Such a patient should be managed as having subacute bacterial endocarditis. Only by accepting these minimal criteria for the

diagnosis of subacute bacterial endocarditis can we hope to make an early diagnosis in many of the cases.

It has been stated that the presence of septicemia and murmur alone do not necessarily mean the patient has bacterial endocarditis.²⁹ However, since it is almost impossible to determine this clinically, one must treat the case as subacute bacterial endocarditis.

One should never rule out the diagnosis of subacute bacterial endocarditis only on the basis of negative blood cultures.

Initial Manifestations which may be confusing:

I shall now outline some of the initial findings in patients with subacute bacterial endocarditis with some comments on how they can lead to confusion with other diagnoses.

Anemia and a cardiac murmur are sometimes the only positive signs noted.^{25, 26} The murmur may be erroneously labeled as being hemic in origin.

Confusion with primary neurologic disease may occur, when the patient's illness is manifested primarily with the dramatic suddenness of a cerebral vascular accident. Patients in the younger age group, who present with hemiplegia or subarachnoid hemorrhage and showing a heart murmur and sinus rhythm, should be studied for other evidence of subacute bacterial endocarditis.¹⁸

Evidence of renal insufficiency may be the most prominent manifestation of this disease.^{5, 18, 19, 30} Bacterial endocarditis may be overlooked in the patient who presents with a picture of uremia in which it is thought the renal disease is primary. The debilitated patient with advanced bacterial endocarditis presenting with uremia, anemia, periodic fever, and heart disease, who has been ill for months may be a real diagnostic problem.

Emboli to other sites in the body may draw attention from the primary disease. Thus a renal embolus with chills and fever may be misdiagnosed as acute pyelitis. An arterial embolus in the leg may similarly draw attention away from the primary

disease. A constant awareness of this is the only way one may avoid such mistakes.³⁰

Congestive heart failure rarely may be the most prominent manifestation in patients with bacterial endocarditis.

DIFFERENTIAL DIAGNOSIS

Because of the insidious onset of this disease and the multiple organs which may be ultimately involved, many erroneous diagnoses have been made before the true nature of the disease is realized. During the early stages of the disease one may be led to make a diagnosis of virus infection or influenza. Rheumatic fever is frequently considered.

When, after adequate study, the diagnosis of subacute bacterial endocarditis and rheumatic fever still remains in doubt, it is thought best to give the patient a therapeutic trial with penicillin and if he responds to this to continue and treat him as having bacterial endocarditis. If he does not respond then the patient should be given a therapeutic trial with salicylates or steroids.¹⁸

As a result of the embolic complications, primary cerebral vascular accidents, pyelonephritis, glomerulonephritis, and renal calculus may be considered.¹² MacDonald²⁰ in a recent report on nonbacterial thrombotic endocarditis noted that this condition, when associated with emboli, may be confused with bacterial endocarditis.

Lupus erythematosus may need to be differentiated.

TREATMENT

It is most important to institute treatment at the earliest possible moment and therefore avoid further damage to the heart and the complications of bacterial endocarditis.

Selection of Drug:

Three factors are very important in choosing a drug as being the ideal therapeutic agent in bacterial endocarditis.¹⁰

(1) It should be bactericidal. (2) It should not be associated with important side effects. (3) It must penetrate clots.

Both penicillin and streptomycin fulfill these requirements. Penicillin is by far

the drug of choice in the treatment of subacute bacterial endocarditis. It is generally used in combination with streptomycin. The broad spectrum antibiotics and the sulfonamides are bacteriostatic and do not fulfill the above criteria.¹⁰

Selection of drug as determined by the offending organism:

A specific etiologic diagnosis is important, not only from the standpoint of making a diagnosis but in administering the proper antibiotic, and in adequate dosage.

Sensitivities of the organisms to antibiotics are generally less important than the past experience with the drugs. Nevertheless, organisms that are recovered from the blood should always have antibiotic sensitivity tests. These tests should measure the bactericidal activity of drugs. The tests for bacterial inhibition (Disk tests) contribute little and may be misleading.

Results of sensitivity tests are usually borne out clinically with penicillin and streptomycin but not so with the broad spectrum antibiotics.¹⁰ The broad spectrum antibiotics frequently only arrest the disease and suppress it only as long as the patient is treated.^{10, 22, 27} A combination of penicillin and streptomycin is particularly effective for the *Streptococcus viridans*, and *gamma streptococcus*. There have been reports of apparent cures of subacute bacterial endocarditis with the broad spectrum antibiotics. Nevertheless, it is usually preferable to initiate treatment with penicillin and streptomycin even though the organism is resistant to penicillin. It has repeatedly been shown that penicillin in massive doses has cured patients with organisms which were very resistant to the drug in vitro.

In cases of enterococcus and staphylococcus, which do not respond to massive doses of penicillin and streptomycin, one must then use the drug or drugs which are determined to be best by sensitivity studies.⁸ Some of the newer antibiotics such as novobiosin, erythromycin, and oleandomycin have been shown to be of value

in the treatment of resistant staphylococcal infections.

Other drugs, such as bacitracin, neomycin, chloromycetin, and the tetracyclines may be effective.^{4, 13, 14} Polymyxin B and neomycin have been used with good results in the treatment of gram negative rods such as pseudomonas, proteus, and *E. coli*, which have become resistant to the usual antibiotics.⁸ In the rare case of mycotic endocarditis, amphotericin is the drug of choice.⁸

When to Begin Treatment:

In the clear cut case, enough blood for several cultures is drawn and massive doses of penicillin, along with streptomycin, are immediately started.

In an acutely ill patient, in whom the diagnosis is not too definite, the same method should be followed.

In the mild to moderately ill patient, in whom the diagnosis is not too definite, a period of observation of up to one week is acceptable during which time repeated blood cultures and examinations are performed.

Treatment should not be delayed solely for blood culture reports.

How to Administer Treatment:

When the results of the cultures have not yet been obtained, begin treatment with aqueous penicillin, 6 million units, and streptomycin, 2 grams daily. Various workers start with from 2 million to 12 million units daily.^{8, 10, 11, 16} Penicillin is given intramuscularly in divided doses every four hours. Streptomycin is given in one half gram doses every six hours. It is advisable to give half of this as dihydrostreptomycin.

If the patient responds to this treatment then there is no need to change except for reducing the streptomycin to one gram daily after one week. If the patient has not responded, clinically, in two to three days then the penicillin dosage should be increased to 10 million units. If there is no response in another three days then the dose should be increased to 20 million units. The reason for rapidly increasing the dosage is due

to the possibility of the offending organism being a staphylococcus or enterococcus, both of which are quite resistant to penicillin and the staphylococcus quickly develops more resistance when inadequate doses of penicillin are administered. If the culture and sensitivity reports are obtained in the meantime then one may alter the medication accordingly.

With patients who respond to the initial doses of penicillin one may switch, after a few days, to the same total dose in the repository form.¹⁸ When penicillin dosage reaches 20 million units daily it is advisable to give this drug continuously intravenously through a polyethylene tube. The penicillin is usually mixed in a total of 1500 ccs. of dextrose in water. Heparin, 25 mgs., is added to each bottle to help avoid the occurrence of thrombophlebitis. Some workers find that, with care, the use of small needles in the veins of the hand or forearm⁸ is as good as the use of the polyethylene catheter. Regardless of which method is used it is advisable to change the infusion tubing at two day intervals.

There have been numerous reports concerning the use of renal tubular blocking agents to enhance the blood level of penicillin.^{5, 10} The one considered the best at the present time is benemid. Although this drug is effective in achieving this end we have not found any need for it. We think it simpler to increase the dosage of penicillin.

I want to make particular reference to staphylococcal endocarditis. This has become a very difficult therapeutic problem.^{10, 28} Not only has there been a marked increase in the incidence of this type of endocarditis, but there has been a marked increase in the percentage of strains of staphylococci which are very resistant to penicillin. In patients in whom the diagnosis of staphylococcal endocarditis is made the initial therapy should consist of even more massive doses of penicillin.^{11, 18} The dosage advocated initially has varied from 20 million to 50 million units.^{11, 23} Streptomycin is given

as previously outlined.

If there is no response on this regimen in three or four days then the dose of penicillin should be immediately increased. Some workers have given as much as 120 million units of penicillin daily.²³ If the patient is unresponsive to penicillin therapy then the drugs which are best by sensitivity studies are used.^{9, 10}

Some reports indicated that two to four of the antibiotics in combination were necessary to effect a cure.^{10, 28} Novobiocin, erythromycin, tetracycline or chloramphenicol, either alone or in combination with streptomycin, bacitracin or neomycin, have been used with success.

Accessory therapeutic measures include those which would be indicated in any patient with heart disease and a complicating infection. Absolute bedrest is recommended until the patient is afebrile. Blood transfusions are indicated in the severely anemic.

The steroids and heparin have no place in the therapy of subacute bacterial endocarditis.

Splenectomies have been done in cases of persistent bacteremia.²¹ Workers in favor of this procedure suggest that the splenic infarct becomes infected and the antibiotics are unable to penetrate the area.

Duration of Treatment:

In those cases in which the clinical response is immediate and the organism is sensitive to penicillin, it is advisable to continue therapy for three to four weeks after a good clinical response has been obtained. When the organism is not sensitive as in the case of the enterococcus or staphylococcus then give six weeks of additional treatment after clinical response. In any case of relapse do the same.

There are reports^{13, 15} on the successful use of short term therapy in patients with penicillin sensitive streptococcus. This consisted of giving penicillin daily for two weeks. The ones who have used this method apparently have had excellent results. This method of treatment has been

advised in those cases in whom an early diagnosis is made.

Response to Treatment:

With proper treatment the patient feels better in two to three days. The temperature falls in one to four days and is usually normal in five to seven days. Blood cultures are negative in two to seven days.

Complications of Treatment:

Drug fever: We have seen, not infrequently, a patient who apparently was having a good response to treatment, with the exception of persistent fever. In these cases, stopping the penicillin results in the patient becoming afebrile.

Other sensitive reactions to penicillin are occurring more frequently. In patients who are allergic to penicillin one may try one of the other types of penicillin. If the patient is still sensitive antihistamine preparations or steroids are frequently helpful. The risk of not using penicillin in such cases is greater than the risk of using it.

Thrombophlebitis at the infusion site may give rise to persistent fever.

PROGNOSIS

With the use of antibiotics, a definite change has resulted in the natural history of many infectious diseases.² A prime example of this is bacterial endocarditis. This disease, which prior to the use of antibiotics, was almost always fatal, now has a permanent recovery rate of 65 to 70 per cent. It has been shown that such patients have lived up to ten years following treatment.^{4, 24} Therefore, the case of healed bacterial endocarditis is a condition that is becoming increasingly important in the natural history of the disease. Today we have the problem of the cured endocarditis patient. A cure of the infectious process is accomplished but sometimes not before it has caused much damage to the affected valve with progressive cardiac deterioration resulting.

The bacteriologic cures are much greater than the survival rate. The patient is cured of the infection but dies from the complications. Christie⁶ reports that 35

per cent of successfully treated patients died later. Forty per cent of the cases died from heart failure and 11 per cent from embolic accidents.

Congestive heart failure accounts for the majority of deaths. Renal insufficiency is the second most frequent cause of death.

Factors which affect the prognosis:

Heart failure is a grave sign with the majority of those patients dying during treatment.

Time of treatment: If treated early the prognosis is better. Most workers state that delay in therapy is, at present, the most important cause of treatment failure.¹² Others attach less value to this factor.

Sensitivity of organism to penicillin: Cases in which the causative organism is resistant to penicillin have less chance of recovery.

Negative blood cultures are associated with a higher mortality.^{9, 10}

Anemia: Severe anemia is usually a bad sign.

Renal insufficiency. Patients with this complication have a higher mortality.

Cerebral vascular emboli: The prognosis may be altered and is dependent on the degree of damage to the affected area.

Valve involved: The aortic valve, when involved, gives a poorer outlook.⁸

Nutritional state: Those patients with a very poor nutritional state usually have a poorer prognosis.

Age: Because of the more unusual initial manifestations in the aged this disease is recognized later and therefore the outlook is poorer.

Keefer¹⁷ sums up the over-all results of present treatment as follows:

Some patients recover from the infection and remain well and asymptomatic for a period of years. This group makes up 60 to 70 per cent of the cases.

Some recover from the signs of infection and die later of heart failure, uremia, or cerebral embolism. This group accounts for a steady death rate after the first six months, possibly equal to the normal death rate in patients with valvular heart disease.

Patients died during treatment, usually within the first two months, with signs of active infection, heart failure, cerebral embolism or hemorrhage. This group comprises about 10 to 30 per cent of all cases.

Some patients recover from an initial infection only to have reinfection occur at a later date. This group is about 2 per cent.

SUMMARY

A discussion of the diagnosis, treatment and prognosis of subacute bacterial endocarditis has been presented.

Awareness of the typical, as well as the unusual manner of presentation of this disease is essential in order to make an early diagnosis.

Early diagnosis and adequate treatment are the prime requisites for successful results.

Spectacular advances have been made in the treatment of this disease with the use of antibiotics. However, the mortality rate of 25 to 30 per cent has not been appreciably altered during the past decade.

Therefore, much remains to be accomplished in the management of subacute bacterial endocarditis.

REFERENCES

1. Belli, J., Waisbren, B. A.: The number of blood cultures necessary to diagnose most cases of bacterial endocarditis, *Am. J. M. Sci.*, 232:284, 1956.
2. Bloomfield, A. L.: Diagnosis and prevention of bacterial endocarditis, *Circulation*, 8:290, 1953.
3. Blumer, G.: Subacute bacterial endocarditis, *Medicine*, 2:105, 1923.
4. Bunn, P. A., Cook, E. T.: Treatment of subacute bacterial endocarditis, *Ann. Int. Med.*, 41:487, 1954.
5. Cates, J. E., Christie, R. V.: Subacute bacterial endocarditis; Review of 442 patients treated, *Quart. J. Med.*, 20:93, 1951.
6. Christie, R. V.: Penicillin in subacute bacterial endocarditis, *Brit. M. J.* 1:1, 1948.
7. Denton, Clarence, Pappas, E. G.: Bacterial endocarditis following cardiac surgery, *Circulation* 15:926, 1956.

8. Dascomb, H.: Personal Communication.
9. Feder, I. A.: Treatment of subacute bacterial endocarditis with negative blood cultures, *Am. J. Med.*, 28:602, 1955.
10. Finland, M.: Treatment of bacterial endocarditis, *New England J. Med.*, 250:372, 1954.
11. Fisher, A. M., Wagner, H. N.: Staphylococcal endocarditis, *Arch. Int. Med.* 95:427, 1955.
12. Friedberg, C. K.: The diagnosis and treatment of subacute bacterial endocarditis, *Am. Pract.*, 4:444, 1953.
13. Geraci, J. E., Martin, W. J.: Antibiotic therapy of bacterial endocarditis, *Circulation*, 8:494, 1953.
14. Geraci, J.: Antibiotic treatment of bacterial endocarditis. Experiences with terramycin in the treatment of subacute bacterial endocarditis, *Proc. Staff Meet. Mayo Clinic*, 27:169, 1952.
15. Hall, B. H., Dawling, H. J.: Successful short term therapy of streptococcal endocarditis with penicillin and streptomycin, *Am. J. M. Sci.*, 230:73, 1955.
16. January, L., Theilen, E. O.: Treatment of subacute bacterial endocarditis, *J. Iowa State M. Soc.*, 42:167, 1952.
17. Keefer, C. S.: Present day treatment of subacute bacterial endocarditis, *J.A.M.A.*, 152:1397, 1953.
18. Kerr, A.: Subacute Bacterial Endocarditis, Charles C Thomas, Springfield, Ill., 1955.
19. Lochmit, V., Steinbreithner, K.: Subacute bacterial endocarditis and kidneys, *Wiener Zeit Med. Grenz.*, 33:41., 1952.
20. MacDonald, R. A., Robbins, S. L.: The significance of nonbacterial thrombotic endocarditis, *Ann. Int. Med.*, 46:255, 1957.
21. Lingeman, C. J., Smith, E. B.: Subacute bacterial endocarditis; Splenectomy in cases refractory to antibiotic therapy, *Arch. Int. Med.*, 97:309, 1956.
22. Balme, H. W., Dormer, A. E.: Bacteriostatic agents in the treatment of subacute bacterial endocarditis, *Brit. M. J.*, 1:500, 1954.
23. Melton, J. T., Logue, B.: Treatment of staphylococcal endocarditis, *Arch. Int. Med.*, 99:581, 1957.
24. Mendelson, C. E., Cahne, A.: Long-term outlook for healed subacute bacterial endocarditis, *J.A.M.A.*, 160:437, 1956.
25. Parsons, W. B., Cooper, Talbert: Occult subacute bacterial endocarditis manifested by hematologic abnormalities including pancytopenia, *Ann. Int. Med.*, 39:3, 1953.
26. Parsons, W. B., Cooper, T.: Anemia in bacterial endocarditis, *J.A.M.A.*, 153:14, 1953.
27. Pilkington, T. R., Eleh, S. D.: The action of seven A.B. singly and in combination on enterococci isolated from cases of subacute bacterial endocarditis, *J. Lab. & Clin. Med.*, 47:562, 1956.
28. Roantree, R. J.: Staphylococcal endocarditis treated with erythromycin, *Arch. Int. Med.*, 95:320, 1955.
29. Schirger, A., Martin, W. J.: Streptococcal bacteremia without endocarditis, *Ann. Int. Med.*, 45:1001, 1956.
30. Seabury, J.: Subacute bacterial endocarditis experience during the past decade, *Arch. Int. Med.*, 79:1, 1947.
31. Waistren, B. A.: Antibiotic treatment of bacterial endocarditis due to enterococcus, *Arch. Int. Med.*, 95:846, 1954.
32. Wallach, J. B., Marellis, G.: Bacterial endocarditis in the aged, *Ann. Int. Med.*, 42:1026, 1955.

ASTHMATIC STATES CAUSED BY MUCOVISCIDOSIS *

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NEW ORLEANS

The triad of cough, wheezing and dyspnea signalizes the symptom complex of asthma. Inasmuch as changes that produce asthma are invariably found in the bronchi, it is tautologic to speak of *bronchial* asthma. Nevertheless, asthma is a specific syndrome with characteristic signs, symptoms, and pathologic alterations. By contrast, almost all diseases of the lungs as well as a number of non-pulmonary diseases may produce asthmatic syndromes; in most instances, these conditions can be differentiated by ordinary clinical procedures.

The extreme diversity of conditions that can eventuate in asthma stems from the fact that all involve a bronchial response. In common with other organs there is a limited number of signs and symptoms that can arise from disease or derangement of function of the bronchial tree.

Among the nonallergic conditions that produce asthmatic states is fibrocystic disease of the pancreas (mucoviscidosis). The epoch making work of Dorothy Andersen³ has delimited this as a specific entity from the broad group of celiac diseases. It is now apparent that meconium ileus in the newborn, and chronic bronchopneumonia in the older infant, are variants of this disorder. Typically, one sees early in the disease repeated, rather severe bouts of infection of the upper and lower respiratory tracts. Evanescent improvement, only, follows use of adequate

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amounts of appropriate antibiotics. With the passage of time the continuing maturation of the disease leads to increasing frequency of such infections, which may be associated with asthmatic symptoms. Review of the records of our 68 children who suffered from this serious systemic disease showed that some degree of wheezing occurred in 33. Thus, a type of intrinsic *bronchial* asthma, or an asthmatic state, may develop in this disorder. Illustrative of this is the following report of cases.

CASE REPORTS

R. M. S., a boy aged 1 year, was admitted to Ochsner Foundation Hospital, in January 1953, because of a persistent infection of the upper respiratory tract. At the age of two months his local physician made a diagnosis of asthmatic bronchitis, which he treated with antibiotics.

Six weeks prior to admission here, pneumonitis developed for which additional antibiotics were given. Since then, the cough and fever had been recurrent. The baby was hospitalized elsewhere in December 1952; on bronchoscopy the mucus membrane of the entire respiratory tree was found to be moderately infected. In the main stem bronchi there was a dry, tenacious secretion from which *Pseudomonas aeruginosa* was cultured.

At the time of admission to Ochsner Foundation Hospital the cough and fever were still present. On examination of the chest bilateral moist, crepitant rales were heard. The abdomen was protuberant and the subcutaneous fatty tissue was atrophied. Prominent peribronchial markings having an irregular appearance, consistent with a diagnosis of fibrocystic disease, were noted on roentgenograms of the chest made elsewhere. The stool contained no trypsin, although there was no history of greasy or foul-smelling stools. Material obtained by duodenal intubation contained no trypsin.

D. M., a boy aged 6½ years, was admitted to Ochsner Foundation Hospital because of recurrent infections of the respiratory tract, foul stools, nasal stuffiness and failure to gain weight. Wheezing had been prominent during infancy. This had been followed by repeated infections of the respiratory tract with coughing. During the summer months the patient had frequently complained of a stuffy nose. The stools had always been frothy and bulky with a peculiar odor.

When the patient was first seen by us, his abdomen was protuberant. Both pulmonary fields were clear on auscultation. In the roentgenogram of the chest the peribronchial markings were accentuated bilaterally. The stool contained no trypsin and the duodenal fluid did not digest

protein beyond a dilution of 1:16. Pronounced increases of both the sodium and chloride ions were found in the sweat. A nasal smear contained numerous eosinophiles. Reactions to dust, alternaria, and Johnson grass on skin testing were positive.

N. N., a boy aged 20 months, had experienced diarrhea since the third day of life. The fecal discharge was yellow, foul-smelling and foamy. Wheezing had also been apparent early and the infant was taking antihistamines when discharged from the hospital after birth. At the age of 15 months he was treated for his first infection of the respiratory tract. This subsequently recurred and was associated with a chronic cough.

When the patient was seen at Ochsner Foundation Hospital, loss of subcutaneous fat was obvious. The chest was filled with dry and moist rales and wheezing was clearly audible without the aid of a stethoscope. The duodenal fluid contained no protein digesting enzymes.

DISCUSSION

The mechanical factors known to cause impairment of pulmonary function in asthma are bronchospastic contraction, edema of the mucous membrane and excessive secretion and retention of mucus. The immediate general effect is the same whether this response is the result of allergic factors (allergic bronchospasm, allergic bronchorrhea) or pulmonary infection as is seen in mucoviscidosis; the symptoms and signs may be so similar as to confuse the most experienced clinician. The relative importance of these mechanical factors is not clear; nevertheless they are all present in fibrocystic disease. In point of fact, in the discussion which followed Andersen's paper of 1938, Kramer said, in reference to two children with wheezing and cough, ". . . the terminal condition began with *asthmatic bronchitis* . . .". A group of such children was studied in Canada by Abbott, McCreary and Pocock;¹ 80 per cent had symptoms and signs referable to the respiratory tract; of this group wheezing was heard in 10 per cent, and when present it was noteworthy. Many other instances of asthmatic clinical states have been recorded as occurring in this disease.

What reasons are there for supposing that bronchospasm exists in these unfor-

tunates? On the one hand it has been the common experience of mature pediatricians that administration of epinephrine in such circumstances has led to prompt, albeit transient, alleviation. In addition, in the bronchograms of one of our patients were seen several areas of narrowing of the sort shown by Di Rienzo¹² to be a concomitant of a multitude of pulmonary diseases. The picture shown in Figure 1 is by no means unique; numerous examples of the same sort of

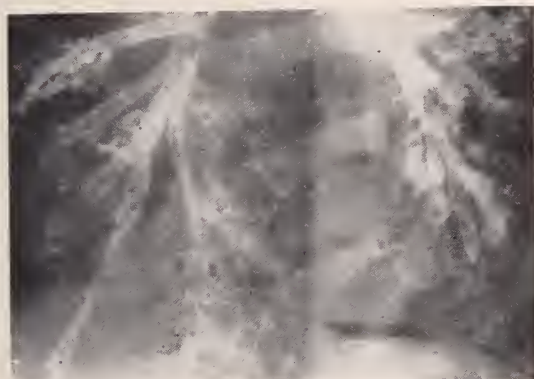


Figure 1. Segmental bronchospasm

segmental bronchospasm can be found in our group of patients with fibrocystic disease of the pancreas.

In Figure 2 we have reproduced evidence of the inflammation and of the



Figure 2. Thick tenacious mucus and inflammation.

thick tenacious mucus so often seen by the pathologist in slides prepared from the lungs of individuals who have died from this disease. Although such mucus has not been studied chemically with the assiduous care applied to investigations of similar material elsewhere in the body,

morphologically it does not differ from that seen in other types of cases, notably (according to the leading authority in this field, Andersen) in patients dying during an attack of asthma. Farber,¹⁴ an outstanding pathologist who has studied the disease with notable zeal, commented on the hyperexpansion of the lungs, the result of partial obstruction in the trachea, the bronchi and the bronchioles caused by the thick tenacious mucoid and mucopurulent exudate. He stated, "At times the impression was gained that the patient finally must have experienced suffocation because of the abundance and tenacity of the mucopurulent exudate in the upper respiratory tract."

Attention may be drawn to the bronchoscopic description of Atkins.⁵ The expiratory intrusion of the posterior bronchial wall into the lumen produced crescentic cross section to the bronchi not differing, in his opinion, from that seen in asthmatic persons.

SUMMARY AND CONCLUSION

Attention has been focussed on the points of similarity in a significant percentage of patients with fibrocystic disease and in those with bronchial asthma of allergic origin. Because of the malignant prognosis of mucoviscidosis, it is the responsibility of all physicians who treat wheezing children to exclude this disorder.

REFERENCES

1. Abbott, V., McCreary, J. F., Pocock, R. and Brown, A.: Fibrocystic disease of the pancreas, *Canad. M. A. J.* 64:419, 1951.
2. Andersen, D. H.: Cystic fibrosis of the pancreas, In *Brennemann Practice of Pediatrics*, Vol. 1, Chapter 29A, W. F. Prior Co. Inc., Hagerstown, Maryland, 1946.
3. Andersen, D. H.: Cystic fibrosis of the pancreas and its relation to celiac disease, *Am. J. Dis. Child.* 56:344, 1938.
4. Andersen, D. H.: Therapy and prognosis of fibrocystic disease of the pancreas, *Pediatrics*, 3:406, 1949.
5. Atkins, J. P.: Bronchoscopic observations on the pulmonary aspects of fibrocystic disease of the pancreas, *Ann. Otol. Rhin. and Laryng.* 57:790, 1948.
6. Attwood, C. J. and Sargent, W. H.: Cystic fibrosis of the pancreas with observations on the appearance of the associated pulmonary lesions, *Radiology*, 39:417, 1942.
7. Blackfan, K. D. and Wolbach, S. B.: Vitamin A deficiency in infants—a clinical and pathological study, *J. Pediat.* 3:679, 1933.
8. Bodian, Martin: *Fibrocystic Disease of the Pancreas, a Congenital Disorder of Mucus Production—Mucosis*, Grune and Stratton, New York, 1953.

9. Daniel, W. A., Jr.: Fibrocystic Disease, J. M. A. Alabama. 14:138, 1944.
 10. Deem, H. and McGeorge, M.: Steatorrhea in infancy (due to pancreatic insufficiency), New Zealand M. J. 40:155, 1941.
 11. Dickey, L. B.: Pulmonary disease, associated with cystic fibrosis of the pancreas, Dis. Chest. 17:151, 1950.
 12. di Rienzo, S.: Radiologic Exploration of the Bronchus, Tr. by Thomas A. Hughes, C. C. Thomas, Springfield, Illinois, 1949.
 13. di Sant'Agnese, Paul A.: Bronchial obstruction with lobar atelectasis and emphysema in cystic fibrosis of the pancreas, Pediatrics. 12:178, 1953.
 14. Farber, S.: Pancreatic function and disease in early life: V. Pathologic changes associated with pancreatic insufficiency in early life, Arch. Path. 37:241, 1944.
 15. Gonce, J. E., Jr.: The diagnosis and treatment of fibrosis of the pancreas, Wisconsin M. J. 50:447, 1951.
 16. Howard, P. J.: Fibrocystic disease; familial character, Am. J. Dis. Child. 68:330, 1953.
 17. Kaye, Robert, Whittenberger, J. L. and Silverman, L.: Respiratory air flow patterns in children, Am. J. Dis. Child. 77:625, 1949.
 18. Kennedy, R. L. J. and Baggenstoss, A. H.: Fibrocystic disease, Proc. Staff Meet., Mayo Clin. 18:487, 1943.
 19. Matheson, W. J.: Fibrocystic disease, Brit. M. J. 2:206, 1949.
 20. McDougall, Clarice: Clinical evaluation of abnormal enzyme content in pancreatic juice of children, Pediatrics. 5:114, 1950.
 21. Molnar, C. J., Jr.: Fibrocystic disease of the pancreas; review of the literature and report of case, U. S. Armed Forces M. J. 1:629, 1950.
 22. Philipshorn, H. F., Lawrence, G. and Lewis, K. C.: Fibrocystic disease; diagnosis based on 26 proved cases, J. Pediat. 25:284, 1944.
 23. Pitt, D.: Fibrocystic disease; review of 14 cases, M. J. Australia. 1:91, 1948.
 24. Rosenfeld, G. B. and Baxter, P. J.: Fibrocystic disease in infants, Canad. M. A. J. 54:438, 1946.
 25. Shwachman, H., Crocker, A. C., Foley, G. E. and Patterson, P. R.: Aureomycin therapy in pulmonary involvement of pancreatic fibrosis (mucoviscidosis), New Eng. J. Med. 241:185, 1949.
 26. Snelling, C. E. and Erb, I. H.: Cystic fibrosis, Arch. Dis. Childhood. 17:220, 1942.
 27. Wallgren, A.: Deux maladies infantiles nouvelles: La toxoplasmose et la maladie fibro-kystique du pancreas, Arch. Fran. Pediat. 5:1, 1948.
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WATER FLUORIDATION

The artificial fluoridation of water to prevent tooth decay has been proven to be of great value. In our cities generally, technical debate is going on as to whether the fluoride content of public drinking water should be raised as a general health measure. Those participating in the debate are individuals and agencies who advocate this as a public health measure. Opposing fluoridation of water are various interests apparently of the type that in the past have opposed vaccination for smallpox and polio, or chlorination of water as a protection against typhoid fever.

The physician is frequently called upon to express an opinion on this subject which should not continue long as a controversial one.

The research upon this topic has been extensive, has continued longer, and has dealt with greater conclusive statistical evidence than any other public health measure ever presented. The volume of material is such that few could undertake to review it adequately. Dr. Louis I. Dublin, the famed statistician of the Metropolitan Life Insurance Company, has just published a condensation of facts which presents conclusive reasons for fluoridation and answers the specious arguments used by those who oppose it. Dr. Dublin states that ordinarily skepticism is a healthy virtue in public affairs and when a new health measure is first suggested people should have questions about it.

Fluoridation has been introduced and 31,566,000 people have adopted water fluoridation programs. Questions are being raised, and what the thoughtful public needs is facts and not fancies. Facts are presented in the pamphlet in a readable and convincing manner. It is seen that 1506 cities and towns have fluoridation programs now. Chicago, Philadelphia, San Francisco, Pittsburgh, St. Louis, Cleveland, Washington, D.C., Baltimore, St. Paul, Buffalo, Milwaukee, Providence, Miami, and Rochester are among these. Five large cities have rejected fluoridation by referendum and in four others it has been voted down by the city councils. Seventy places, which had inactive water fluoridation programs, have discontinued them.

The facts in support of the use of one part of fluoride per million parts of water are briefly as follows: It is safe and beneficial, and is not productive of any undesirable systemic effects to man. If used from conception through adult life, it reduces tooth decay up to 60 per cent. Its cost is about ten cents per person per year. Fluoride concentrations occurring naturally in water as high as 15 parts per million have not caused bodily harm. The high excess fluorides have caused stained or mottled teeth. No such staining or mottling

occurs when the fluoride is 1.5 parts or less per million of water. Fluoridation is industrially harmless and interferes with no industrial, chemical, or other domestic use of the water.

The objections raised by opponents of fluoridation are effectively answered. It is shown that pure water is a myth. All water contains traces of fluoride. The Supreme Court of Louisiana decided in the case of *Chapman vs. Shreveport* that "addition of fluoride to the water is not medicating it in the generally accepted sense, but was adding to it one of the mineral properties naturally found in water in some sections of the country." Modern city water plants have occasion to add many chemicals to the water furnished. Among these are: activated carbon, filter alum, ammonia gas or ammonium sulphate, ferrous sulphate, carbon dioxide, chlorine, lime, soda ash, and sodium chloride. Water engineers would have no more difficulty in maintaining the proper amount of fluoride in the water than they have in controlling the amounts of these chemicals already being used.

Alternative methods of using fluoride have been proposed and examined. None has the practical value that fluoridation of the water supply presents. Fluoridation of water has received the greatest support from national scientific bodies of any health proposal ever advanced. These include all

the national organizations concerned with health and many who represent civic business and labor interests.

Only about one quarter of the number of Americans who could enjoy better dental health are able to do so through this nutritional measure. Dental health continues to be a matter of great importance. Next to the common cold, tooth decay is the most universal disease suffered by mankind. Dental defects were the single largest cause of rejections among the first two million men examined for military service during World War II. The requirement was that only six upper teeth made contact with six lower teeth. Nearly 10 per cent of the men between the ages of 18 and 35 did not qualify for this reason.

The answer that better dental care should be arranged does not meet the practical needs of the situation. Both dental knowledge and skill are here, but those who need it do not avail themselves of it. Fluoridation will reduce the need up to 60 per cent.

The facts presented in this pamphlet can become a valuable aid to the physician who, of necessity, must have and must express an opinion on the subject, and in matters such as these physicians should continue to take a lead.

Dublin, Louis I.: Water Fluoridation: Facts Not Myths, Public Affairs Pamphlet No. 251, 22 East 38th Street, New York 16, N. Y. Price 25¢.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

CAMERON PARISH MEDICAL REHABILITATION FUND

Everyone is now thoroughly familiar with the death and destruction left behind by Hurricane Audrey which ripped through Cameron and Calcasieu parishes recently, claiming the lives of over 500 people and resulting in countless millions of dollars in property damage.

At the same time, many of you probably are not fully aware of the manner in which our colleagues in the hurricane area acquitted them-

selves in the period during and after the great disaster.

One veteran disaster worker, Dr. Joseph Hertell of the American Red Cross, commented: "I have witnessed 10 major disasters in the past 5 years. Of all places I have been, the disaster relief operation carried out by the Calcasieu Parish Medical Society was the best planned and executed."

The high praise given by Dr. Hertell is typical of the comments that were heard in the Cameron-

Lake Charles area after the hurricane. All Louisiana doctors should take great pride in the services which our courageous colleagues rendered during this time of great need. Their work was truly in the highest traditions of professional medicine and, in many instances, was far above and beyond the call of duty.

As a tribute to ALL doctors who performed so gallantly during the disaster of Hurricane Audrey, the Louisiana State Medical Society has established a Cameron Parish Medical Rehabilitation Fund which will be used to assist three Society members who were particularly hard hit by the hurricane.

I am referring to Dr. C. W. Clark of Cameron and Drs. G. W. Dix and S. E. Carter of Creole whose physical assets, including their clinics and places of residence, were completely destroyed by the hurricane. In addition, Dr. Clark lost three of his five children.

The newspapers have carried accounts of the heroic contributions which these three doctors made at the height of the hurricane. During and immediately following the storm, they were the only physicians in the areas of worst injury and destruction. It is impossible to fully describe the feats which they performed. They literally worked without sleep for days, and many lives were undoubtedly saved through their efforts.

As far as the Society has been able to determine, the three doctors in question have received no offers of financial assistance to help them rebuild their offices and clinics and to get back into practice. Apparently, this is their most pressing need.

The purpose of the Rehabilitation Fund is to give all members of the Louisiana State Medical Society an opportunity to display their admiration and gratitude to these doctors for their splendid contribution to the cause of medicine.

Contributions of any size will be most welcome.

Because the need is immediate, you are asked to mail checks as quickly as possible (and as large as you can afford) to the following address:

Cameron Parish Medical Rehabilitation Fund
c/o Louisiana State Medical Society
Room 105—1430 Tulane Avenue
New Orleans 12, Louisiana

A.M.A. SPECIAL REPORT OF THE LAW DEPARTMENT MEDICAL PROFESSIONAL LIABILITY

INTRODUCTION

At its meeting in December, 1954, the Board of Trustees requested the Law Department to review previous actions of the American Medical Association with respect to medical professional liability and to plan and initiate any necessary additional studies. This action by the Board was taken in response to a number of resolutions presented to the House of Delegates by state medical societies requesting advice and assistance in this field.

After consultation with the staff of the Council on Medical Service and the Committee on Professional Liability of the Committee on Medicolegal Problems, it was determined that further investigation and study was necessary and desirable.

It was recognized at the outset that two approaches to the study were available. We could say as little as possible about the subject for fear of stimulating additional claims or we could plan a program designed to educate the members of the profession concerning accident and claims prevention and alert them to the pitfalls and occupational hazards in the practice of medicine. It was and is our belief that only by facing up to the facts of the past and present concerning medical professional liability can the profession intelligently plan ways and means to cope with this problem in the future.

Since the initiation of its study, the Law Department has submitted three progress reports to the Board of Trustees: one in May, 1955, one in November, 1955, and the most recent in May, 1956. This report is intended to summarize the most significant results of our study up to the present time.

For approximately two years, facts, figures, and opinions have been collected. This material has been reviewed, studied, and analyzed. It is hoped that the results will add to existing knowledge in the field and will provide the basis for workable and effective professional liability claims prevention programs.

SCOPE OF THE STUDY

The following projects have been completed and the results have either been published in THE JOURNAL or will appear within the next few weeks:

(a) State Regulations.—A questionnaire was prepared jointly with the Council on Medical Service and sent to each state insurance commissioner for the purpose of obtaining authoritative information regarding the regulation and control of professional liability insurance rates.

(b) Survey of State Medical Societies.—A questionnaire was sent to all of the state societies and the medical societies of the District of Columbia, Hawaii, and Alaska to obtain the opinion of society officials concerning such subjects as: the average amount of coverage and the availability of professional liability insurance, the most prevalent problems in the field, and the status of claims prevention programs.

(c) State Statutes of Limitation.—A detailed study has been made of the statutes of limitation of each state relating to medical professional liability.

(d) Analysis of Reported Cases.—A review has been made of medical professional liability court cases on which official reports have been published from 1935 through 1955. The analysis of these reported cases indicates the geographical areas in which professional liability cases occur most frequently, the types of medical procedures involved, the circumstances which caused the suits to be filed, and their disposition.

(e) Government Physician.—An analysis has been made of professional liability claims involving physicians in all branches of federal government service.

(f) Survey of National Medical Societies.—A questionnaire inquiring as to available group insurance programs or other similar arrangements was sent to and completed by 13 national medical societies.

(g) Opinion Survey of Physicians.—A questionnaire was sent to approximately 7,500 members of the American Medical Association, representing a random sample of about 5% of the membership. Of these questionnaires 71.2%, or 5,341, were completed and returned. Opinions were requested on various aspects of medical professional liability and inquiry was made as to whether a professional liability claim has ever been brought against them. A second questionnaire requesting detailed information was sent to those physicians who indicated that a professional liability claim or suit has been brought against them.

(h) *Special Articles*.—The preparation and publication of a series of articles on various aspects of medical professional liability, entitled: *The History of Professional Liability Suits in the United States; Expressing Opinions as to Former Treatments; Put It in Writing, Doctor; Medicolegal Hazards of Anesthesia; Hazardous Fields of Medicine in Relation to Professional Liability; Res Ipsa Loquitur—Liability Without Fault; Rule of Respondeat Superior; Professional Liability Insurance; Amount of Coverage; and Professional Liability Claims Prevention.*

The above categories of inquiry form the basis for this report. In conducting this study our hypothesis has been that most professional liability claims can be prevented if knowledge of the causes of past claims is put to intelligent use. The information we have obtained, thus far, confirms this belief. Although we have not exhausted all possible sources of information, we have learned a great deal about professional liability and the causes of claims.

THE LAW OF PROFESSIONAL LIABILITY

Although this report is primarily concerned with the legal duty of the physician to avoid injury to his patients, we also of necessity have given some consideration to the physician's ethical, moral, and social responsibilities in the practice of medicine. Generally, the fulfillment of these responsibilities will serve to satisfy the obligations which the law imposes upon the physician.

It is a general rule of law that a physician must possess that degree of medical knowledge and skill possessed by other physicians in his or a similar community engaged in a similar type of practice. He must also use his best judgment and reasonable and ordinary care in applying his knowledge and skill to the treatment of patients. The specialist or the man who holds himself out to the public as a specialist is required to possess and exercise that degree of care and skill commonly possessed by those engaged in the same specialty, in the same or similar community.

THE NATURE OF THE PROBLEM

Patients who have sustained an unsatisfactory result and are aware that they have not received the best possible medical care are potential claimants. Where there is a poor medical result, merely fulfilling legal standards of care is sometimes not enough to prevent a claim. This usually is the case when the patient believes that the physician is not sufficiently sympathetic or if he considers the physician's fees to be excessive.

Professional liability cannot therefore be properly regarded as a legal problem exclusively. It is also a medical problem and one which in our opinion requires the same intensive study that the profession has devoted to the conquering of disease. The legal problems associated with medical professional liability can be dealt with adequately only if medicine will provide the type of emphasis to accident prevention and the utilization of already acquired knowledge as it does to scientific advancement. When effective means are discovered for reducing or minimizing medical professional liability problems it will be physicians who will lead the way by devising techniques that will minimize medical mistakes and patient dissatisfactions.

AVAILABILITY OF PROFESSIONAL LIABILITY INSURANCE AND AMOUNT OF COVERAGE

Without exception, all of the organizational representatives who replied to our medical society questionnaire indicated that medical professional liability insurance was available to the physicians in their states. Furthermore, all of them, except two, stated that it is not difficult to obtain. One indicated that physicians in certain specialties had difficulty, and another said that difficulties had been encountered by physicians who had a previous claim or suit brought against them.

In the survey of individual physicians, 92.3% said that they carried professional liability insurance and 92.6% said that the insurance was not difficult to obtain. Of those answering the questionnaire, 56.4% expressed the

opinion that the cost of professional liability insurance is reasonable.

The limits of professional liability coverage appear to vary widely even within a state and within the different types of practice. According to the information supplied by medical society representatives, the average (median) coverage across the country for general practitioners is \$25,000 for one claim and \$75,000 for all claims during the year; for surgeons and other specialists \$100,000 and \$300,000. There are at least 45 carriers writing medical professional liability insurance in the United States.

EFFECT OF PROFESSIONAL LIABILITY CLAIMS ON PHYSICIAN'S REPUTATION

A substantial majority of medical society representatives reported that in their opinion professional liability claims have little or no effect on the reputation and on the practice of the physician involved. A few medical society spokesmen explained that in the smaller communities in their area the effects of such claims and suits are more pronounced than in larger communities. Other responses indicated that the effects were greater when newspaper publicity was given to the case. A few responses explained that the effects were more adverse if the physician had previously been the subject of a professional liability claim or suit.

INCIDENCE OF PROFESSIONAL LIABILITY CLAIMS

Many medical society executives and individual physicians have, on numerous occasions in the past, expressed concern over what they describe as an "alarming" increase in the frequency of professional liability claims. It is unfortunate that insurance company records are either unavailable or inaccessible to determine the actual trend. Realizing that the individual physician may not be in a position to supply authoritative information as to whether there is, in fact, a rapid rise in the frequency of claims in his community, in the absence of more accurate data, we nevertheless feel that their opinions deserve consideration. According to our survey of physicians, only 29.7% of the respondents to the question on this point were of the opinion that there has been an increase during the past five years. Thirty-nine and seven-tenths per cent of the respondents felt that the incidence of claims had not increased. The remainder thought that claims had decreased or else they had no opinion.

In California, Louisiana, New York, Rhode Island, Utah, the District of Columbia, and Hawaii, there was a clear-cut expression of opinion that professional liability claims have increased in frequency during the past five years. For example, 59.7% of the California physicians said that in their opinion there has been an increase.

VALIDITY OF CLAIMS

Our study of reported court decisions and the survey of physicians who stated that a claim had been brought against them indicates that approximately 50% of the claims and suits could not be sustained legally. There were, however, a considerable number of instances reported in which a claim was brought against a qualified physician which involved either actual negligence in treatment or substantial basis on which a patient could reasonably believe he suffered from the negligence of a physician. In a few instances it appeared that the claims were either fraudulent or so wholly lacking in foundation as to compel the inference that the patient was acting in bad faith.

Many physicians consider the problems of professional liability as a matter of academic interest. The fact is that professional liability claims are not limited to a small group of "malpractice prone" doctors. Among the physicians who indicated that they had experienced claims, 86.5% incurred only one claim in their entire professional practice. Only 10.5% of the physicians who reported claims had two claims in their entire professional practice; 1.9%, three claims; and 1.1%, four claims.

Our figures indicate that professional liability is the problem of the many, not the few.

In a number of cases which were resolved in favor of the physician because of technical legal grounds, it is possible that the verdict would have been against the defendant had the case been decided on its medical merits. On the other hand, there was a significant number of cases involving the doctrine of "res ipsa loquitur" (the thing speaks for itself) wherein the courts assumed negligence solely because there was no medical explanation for an unsatisfactory result.

PROFESSIONAL LIABILITY CLAIMS REVIEW COMMITTEES

The executives of 31 state medical societies indicated that a claims review program has been established in their state on either a state or county level. The usual procedure followed by these committees is this: When a claim is reported, the physician involved is called in to meet with the committee. The committee attempts to determine whether the claim is legitimate and whether there is evidence of actual professional liability. If the physician has been careless or unethical or has undertaken procedures beyond his competence, he and the insurance carrier are advised to settle the case. If the negligence of the physician is not apparent, every legitimate effort is made to encourage or assist in the defense of the case.

We feel that these committees can render a real service to the public and the profession by indirectly improving the quality of patient care, and in the discouragement of invalid or nuisance claims. Such committees should not attempt to usurp the function of courts in the adjudication of claims nor interfere in the normal relationship between the physician and his insurance carrier.

PROFESSIONAL LIABILITY CLAIMS PREVENTION PROGRAMS

Although only 21 state medical societies reported that they have a claims prevention program, 73.9% of the physicians polled believe that such programs perform a valuable function. Of the physician respondents, 23.7% said that a claims prevention program is now offered by their county medical societies. Of this number, 76.1% rated their county programs as either adequate or excellent.

It appears from these figures, and from the fact that 76.3% of the physicians reported the absence of claims prevention programs in their county medical societies, that there is a nation-wide need and a desire on the part of the medical profession to stimulate the initiation of such programs.

If properly planned and implemented such programs have a twofold objective: the prevention of medical accidents which lead to claims and the prevention of unwarranted claims—in brief, the improvement of medical service.

CLAIMS STATISTICS

Following are some of the significant statistics concerning professional liability claims as shown by our survey of physicians:

(a) 14.1%, or approximately one out of every seven physicians responding to our questionnaire, experienced professional liability claims during his professional medical career.

(b) 53.7% of those who have had claims said that the claims were brought against them since 1950.

(c) 43% said that the alleged act of malpractice occurred since 1950.

(d) 34 years was the approximate median age of patient bringing the claim.

(e) 55% of the claimants were female, but 10 states had more male than female claimants, and 6 states had about the same number of female and male claimants.

(f) 72.5% of the physicians respondents who had claims reported that they had personally performed the treatment or act of alleged malpractice.

(g) 67.2% of the incidents of alleged malpractice occurred in hospitals, 23.9% in the physician's office, 6.3% in the home of patient, and the remaining 2.6% occurred elsewhere in such places as factories, or the place of the accident was not stated by the respondent.

(h) 30.9% of the claims involved surgery, 20.0% medicine, 19.7% orthopedics, 12.5% obstetrics and gynecology, 6.2% neuropsychiatry, 5.6% anesthesiology, and the remaining 1.1% were either too small to tabulate separately or were not stated by the respondent.

(i) The physicians who had 93.2% of the claims reported that they had professional liability insurance at the time of the alleged incident.

(j) 28.9% of the physicians against whom claims were brought are certified by an American specialty board.

(k) 50.4% of the physicians against whom claims were brought stated that they were full-time specialists.

(l) Physicians experiencing claims said that they were in practice, on the average (median), about 13 years before they had a claim.

CONCLUSIONS

After studying the problems of medical professional liability for the past two years, our basic conclusion is that most claims are preventable and not inevitable. We feel that our analysis of professional liability cases and claims and the surveys we have conducted warrant the following specific conclusions:

(a) An element which is present in all professional liability claims is dissatisfaction arising out of the physician-patient relations. Many of the cases which actually involved substandard medical treatment would probably not have matured into claims had it not been for some other cause of friction between the patient and the physician.

(b) Professional liability, although varying in severity in different localities, is a national problem which transcends local boundaries. To be effective, a professional liability claims prevention program requires leadership at the national as well as the state and local levels.

(c) The objective of the medical profession is not the prevention of professional liability claims as such, but the prevention of avoidable errors and omissions that result in injury to the patient and stimulate litigation, and the discouragement of unfounded claims. To implement this objective there is need for (1) an intensive educational program which emphasizes the nonmedical as well as the medical causes for professional liability claims, and (2) the utilization of the self-disciplining resources of the medical profession in the prevention of medical accidents within and outside the hospital.

(d) Regardless of the safety measures that are taken, the ever-increasing complexities of modern medicine create possibilities for human errors and omission even among the most qualified and experienced practitioners.

(e) In the interest of the public as well as the profession, physicians who have demonstrated that they are careless, incompetent or unethical in the treatment of patients should be dealt with effectively through medical society, state licensure and hospital disciplines to prevent the recurrence of patient injury.

(f) An effective educational and accident prevention program should include not only physicians, but physicians' employees and the hospital personnel for whose acts the physician may be responsible.

(g) An effective prevention program should include periodic examinations of equipment to avoid mechanical failures, and the abandonment of obsolete and defective devices.

RECOMMENDATIONS

(a) Considering that more than two out of three of the incidents resulting in professional liability claims occur in hospitals, patient tort liability is now a matter of common interest and mutual concern between the medical profession and hospitals. It is suggested that the Board of Trustees consider the advisability of enter-

ing into discussions with representatives of the American Hospital Association with the objective of formulating and implementing an effective in-hospital safety and accident prevention program.

(b) We recommend that this report be called to the attention of the American Medical Association's representatives on the Joint Commission on the Accreditation of Hospitals for their consideration as to the feasibility of encouraging that organization's interest in the subject herein presented.

(c) That state and county medical societies be urged by the Board of Trustees and the House of Delegates to create or, if in existence, implement more effectively, claims prevention programs. To facilitate the efforts of the state societies in this project, the Law Department is forwarding to each state executive secretary all statistics pertaining to his state which have been collected

during the course of the current survey.

(d) That state and county medical societies be encouraged to show the film on medical professional liability prevention which will be previewed on June 5, 1957, and to plan informational and educational programs on this subject at state and county meetings.

(e) That the Board of Trustees authorize the printing and distribution of the compilation of medicolegal forms and explanatory text material which has been developed by the Law Department.

(f) That the Law Department be authorized to conduct the second phase of the professional liability survey, consisting of an opinion survey of selected attorneys and the judiciary, an analysis of available information concerning insurance experience and a survey of comparable fields of negligence actions.

MEDICAL NEWS SECTION C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

MAKE ARRANGEMENTS NOW TO ATTEND TRI-STATE MEDICAL SOCIETY MEETING CONFEDERATE MEMORIAL MEDICAL CENTER

Shreveport, Louisiana
September 11-12, 1957

PROGRAM WILL INCLUDE: Both Lectures and
Live Clinics

Pediatrics

Dr. Joseph H. Rosenzweig
Hot Springs, Arkansas

Medicine

Dr. Robert Schneider
Oklahoma City, Oklahoma

Orthopedics

Dr. Carrol B. Larson
Iowa City, Iowa

EENT

Dr. M. O. Marchman, Jr.
Dallas, Texas

Obstetrics & Gynecology

Dr. Joseph B. Sheffery
Washington, D. C.

Surgery

Dr. O. H. Beahrs
Rochester, Minnesota

Urology

Dr. Edgar Burns
New Orleans, Louisiana

Pathology

Dr. W. R. Mathews
Shreveport, Louisiana

FELLOWSHIP CERTIFICATES AMERICAN COLLEGE OF CHEST PHYSICIANS

The following members of the Louisiana State Medical Society received their Fellowship certificates in the College at the Convocation on June 1 in New York: Drs. Charles A. Beskin, Baton Rouge; Lawrence Golden, Metairie; Albert L. Hyman, New Orleans; Cheney C. Joseph, Baton Rouge; William Leon, New Orleans, and George A. Skinner, Greenwell Springs.

Dr. Lawrence H. Strug of New Orleans was re-elected Governor of the College for Louisiana.

POSTGRADUATE COURSES ON DISEASE OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians will present the following Postgraduate Courses

on Diseases of the Chest this fall:

12th Annual Postgraduate Course
Hotel Knickerbocker, Chicago, Illinois
October 21-25

10th Annual Postgraduate Course
Park-Sheraton Hotel, New York City
November 11-15

3rd Annual Postgraduate Course
Ambassador Hotel, Los Angeles, California
December 9-13

Tuition for each course is \$75. The most recent advances in the diagnosis and treatment of chest diseases — medical and surgical — will be presented.

Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

NEW FILM IN A.M.A. SERIES ADVISES DOCTORS HOW TO AVOID PROFESSIONAL LIABILITY HAZARDS

A new film that shows physicians how to avoid the recurrent headache of medical practice today—the professional liability claim—is now available from the American Medical Association film library for county society and other professional bookings.

Titled “The Doctor Defendant”, the new film was premiered the week of June 5 in the New York Coliseum before a large audience of physicians attending the 106th annual meeting of the A.M.A. The 34-minute black-and-white sound film is the second in the “Medicine and the Law” film series produced by the Wm. S. Merrell Company, ethical pharmaceutical laboratories of Cincinnati, Ohio, in cooperation with the A.M.A. and the American Bar Association.

The new movie presents in concise and dramatic terms the stories of four doctors who find themselves cast in the disturbing role of “The Doctor Defendant”. In reviewing these cases, the film also demonstrates how a county medical society professional liability review committee functions.

Medical societies may book “The Doctor Defendant” from the A.M.A. film library beginning July 1 for showings before their own members.

1957 ANNUAL CONVENTION NATIONAL SOCIETY FOR CRIPPLED CHILDREN AND ADULTS

The 1957 annual convention of the National Society for Crippled Children and Adults—the Easter Seal Society—will be held October 31 to November 2 in Chicago's Palmer House, Dean W. Roberts, M. D., executive director, announced.

Prominent authorities who specialize in the rehabilitation of crippled children and adults as

well as lay persons interested in non-scientific aspects of the work will participate in the three-day meeting. Speeches, seminars, workshops, clinics and demonstrations will spotlight the newest techniques and latest information in the care, treatment and training of the crippled.

Delegates expected to attend the meeting will come from Easter Seal societies in the 48 states, District of Columbia, Alaska, Hawaii and Puerto Rico.

Dr. James B. Johnson, prominent Newark, Ohio, orthopedic surgeon, is chairman of the 1957 convention.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Applications for certification (American Board of Obstetrics and Gynecology), new and reopened, Part I, and requests for re-examination Part II are now being accepted. All candidates are urged to make such application at the earliest possible date. Deadline date for receipt of applications is September 1, 1957. No applications can be accepted after that date.

Candidates for admission to the Examinations are required to submit with their application, an unbound 8½ x 11" typewritten list of all patients admitted to the hospitals where they practice, for the year preceding their application, or the year prior to their request for reopening of their application. This information is to be attested to by the Record Librarian, Superintendent, or Director of the hospitals where the patients are admitted.

Current Bulletins outlining present requirements may be obtained by writing to Robert L. Faulkner, M. D., Secretary, 2105 Adelbert Road, Cleveland 6, Ohio.

UROLOGY AWARD

The American Urological Association offers an annual award of \$1000 (first prize of \$500, second prize \$300 and third prize \$200) for essays on the result of some clinical or laboratory research in Urology. Competition shall be limited to urologists who have been graduated not more than ten years, and to hospital internes and residents doing research work in Urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Roosevelt Hotel, New Orleans, Louisiana, April 28 - May 1, 1958.

For full particulars write the Executive Secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1957.

INTERNATIONAL CONFERENCE OF ULTRASONICS IN MEDICINE

Sponsored by the American Institute of Ultrasonics in Medicine, Statler Hotel, Los Angeles, California, September 6-7, 1957. John H. Aldes, M.D., Secretary, 4833 Fountain Avenue, Los Angeles 29, California.

The meeting will cover the biological and physiological principles, as well as the clinical aspects of ultrasonics in medicine. There will also be a round table conference covering all these phases. Participating in the meeting will be representatives from Europe, South America and Japan.

ACADEMY OF PSYCHOSOMATIC MEDICINE

The program of the fourth annual meeting of The Academy of Psychosomatic Medicine to be held October 17-19, 1957, at the Morrison Hotel in Chicago will be devoted to "Psychosomatic Aspects of Obstetrics, Gynecology, Endocrinology and Diseases of Metabolism". The meeting will be open to all scientific disciplines, as well as psychologists, social workers and nurses. Information may be obtained from Dr. William S. Kroger, Secretary, 104 South Michigan Avenue, Chicago 3, Illinois.

This is the first meeting ever held in this country where every one of these specialties will be presented by a multi-disciplinary approach. The panels and symposiums will include obstetricians, gynecologists, endocrinologists, periodontists, psychiatrists, psychologists, anesthesiologists and other specialists in various fields of medicine. There will also be twenty-four round tables covering all aspects of the above specialties.

The purpose of the Academy is to teach psychosomatic medicine in a manner assimilable to the general practitioner and non-psychiatrically oriented physician.

RADIOLOGICAL SOCIETY ELECTS NEW OFFICERS

In May 1957, the Radiological Society of Louisiana held its annual meeting, and the following new officers were elected:

President, M. Ragan Green, M.D.

Vice-President, J. T. Briere, M.D.

Secretary-Treasurer, Seymour Ochsner, M.D.

EIGHT HUMAN RABIES DEATHS REPORTED IN 1956

Eight Americans died from rabies in 1956, according to a consultant for the Journal of the American Medical Association.

In addition, one other death was attributed to rabies, but was not confirmed by autopsy, the consultant wrote in the June 29 Journal in response to a query from a Missouri physician.

Four of the confirmed deaths, which were reported to the National Office of Vital Statistics, occurred in Dallas, Texas, in January, June, July and October. The victims were a man aged 63, two boys aged three and 12, and a girl aged eight.

The other deaths occurred in Austin, Texas, in a man 39; Mobile County, Ala., in a woman 26; Lake County, Ind., in a woman 70, and Santa Fe, N. M., in a girl 7.

Rabies, a virus disease, is acquired through the bite of a rabid animal, usually a dog or a cat. Cows, foxes, skunks, bats and other animals also are known to carry the disease. Vaccination of household pets is the best means of stopping the spread of the disease.

According to the National Office of Vital Statistics, the death rates for 1951-55 were: 1951, 18; 1952, 24; 1953, 12; 1954, 13, and 1955, 4.

PICTURES HELP DOCTOR IN EXPLANATION

Visual education has moved into the doctor's office.

Writing in the current (July 13) Journal of the American Medical Association, Dr. John B. Gregg, Sioux Fall, S.D., an otolaryngologist, told how he uses slide films to show patients exactly what is the matter with them.

He has found that interview time can be cut by one third to one half by using pictures. In addition, pictures help the patient to better understand his ailments. In some cases pictures have helped convince patients of the need for operations and have helped allay needless fears, Dr. Gregg said.

He first used pictures torn from medical publications, but they were cumbersome and soon became tattered from use. He next used a hand slide viewer, but this was time consuming if more than one person looked at the slide. Now he projects the pictures on the wall.

In an average office day, the slides are used two or three times, he said.

Educating patients about medical problems is one of the duties of the doctor, but it is frequently neglected because it is so time consuming, he said. The physician-patient relationship breaks down. By using visual education in the office, "greater understanding can be achieved in less time and with less effort," Dr. Gregg concluded.

SABIN SUGGESTS TEST PLAN FOR ORAL POLIO VACCINE

Dr. Albert B. Sabin, Cincinnati, has suggested that counties where the mass use of killed-virus polio vaccine is not economically feasible might be logical place to test his recently developed live-virus vaccine.

In these countries there is no question of waiting to see just how effective the killed-virus (Salk) vaccine will be over a period of years, he said in the current (July 13) Journal of the American Medical Association.

Dr. Sabin, who is with the Children's Hospital Research Foundation, University of Cincinnati College of Medicine, read the article earlier this week at the fourth International Poliomyelitis Conference in Geneva, Switzerland.

His vaccine, a liquid which is taken by mouth, is made with live polio viruses which have been attenuated, or greatly reduced in potency. After the vaccine is swallowed, the viruses multiply in the alimentary tract and cause the body to de-

velop antibodies against the disease.

Recently completed tests on 110 humans showed that a single feeding of attenuated virus produced resistance to reinfection of the alimentary tract comparable to that found in naturally immune persons, while no such resistance was found in people immunized by killed-virus vaccine, Dr. Sabin said.

One of the problems of a live-virus vaccine is the extent to which the viruses excreted by persons after ingestion may be dangerous to other human beings. In fact, this "represents the greatest obstacle to the immediate widespread use of the best attenuated vaccine," Dr. Sabin said.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

The president of the Woman's Auxiliary to the Orleans Parish Medical Society, Mrs. Eugene H. Countiss, called a meeting of the Board members on the morning of May 28th, 1957, at her home on Robert Street for the purpose of expounding and familiarizing each member with the duties and obligations of her chairmanship.

It was an enthusiastic group discussion of many projects and objectives of interest to the Auxiliary.

At the conclusion of the meeting it was evi-

dent that a Board of well informed chairmen were eager to assume their responsibilities to the auxiliary and take part in a year of progress, proficiency and pleasure.

A delightful coffee party followed the meeting.

The Woman's Auxiliary will recess during the summer months with the first meeting of the fall season on October 9th at the Orleans Club.

Mrs. Branch J. Aymond,
Publicity Chairman.

BOOK REVIEWS

Anesthesia in Ophthalmology; by Walter S. Atkinson, M. D., Springfield, Illinois, Charles C Thomas, 1955. Pp. 86, Price \$3.25. (A monograph in American Lectures in Ophthalmology)

This is probably the most comprehensive, yet concise, discussion of the principles and practices involved in the use of anesthesia in the field of ophthalmology to be found in the English language. For the first time, the physiology, pharmacology and toxicology of local and general anesthetics, and ocular anatomy and neurology are brought together logically and succinctly.

The standard references of Goodman and Gilman, Rovenstine and Adriani, have been combed for basic information. To this has been added the contributions of such pioneers in ocular anesthesia as O'Brien and Kirby. In addition, Dr. Henderson has included some original ideas and procedures, notably a new method of blocking the facial nerves.

About a quarter of the book is devoted to pre-anesthetic medications and preparation of the patient for surgery. Another quarter is given over to general anesthesia. The rest contains detailed descriptions of topical, infiltration, block,

and retrobulbar anesthesia, akinesia, and anesthesia of the lids, lacrimal sac and conjunctiva. Drugs, dosages and equipment, down to length of needles and size of syringes, are conveniently listed. Controversial subjects like curare and hyaluronidase are treated in separate chapters. The diagrams and pictures are excellent, and the illustrations for the chapter on anesthetic emergencies bring home vividly the signs of procaine reactions and their treatment.

The material on general anesthesia is written from the viewpoint that "the importance of having a competent anesthesiologist (give the anesthetic) cannot be overemphasized". Frequently in everyday practice a nurse anesthetist must be used in his place and consequently any serious untoward reaction or complication must be attended to by the surgeon. It is for this reason that a description of cardiac arrest and its treatment might well have been included.

Editorially, the publisher would do well to proofread again pages three and ten for word and sentence structure. However, these are minor printing errors and do not detract from the importance of Dr. Atkinson's fine work. This

classic monograph deserves to be read and studied by every resident and practicing ophthalmologist.

JOSEPH P. RUMAGE, M. D.

Causal Factors in Cancer of the Lung; by Carl V. Weller, M. D., Springfield, Illinois, Charles C Thomas, 1956, Pp. 113, \$3.00.

In this brief and well organized monograph based upon the Beaumont Lecture for 1955, Dr. Weller, an eminent pathologist, has presented the evidence which implicates extrinsic factors in the production of bronchogenic carcinoma. Before considering external causation, he points out that no hereditary patterns for this neoplasm have been demonstrated; this makes the existence of important extrinsic factors even more likely and improves the outlook for ultimate prevention of this common and deadly disease. Specific external factors are introduced by expert use of the historical method. Carcinoma of the lung is considered in relation to occupation, atmospheric pollution, and tobacco smoking.

The evidence is impartially collected and the author's opinions are expressed at the close of each section. He concludes that there is a definite association between the processing of chromates and asbestos and lung cancer. Mining at Schneeberg seems causally related to bronchogenic carcinoma but specific factors are not yet established; radioactivity and arsenic, acting alone or together, are the likeliest agents. The role of carcinogens in the atmosphere of modern cities requires further investigation.

Dr. Weller concludes his discussion of tobacco smoking with agreement that the association of heavy cigarette smoking and lung cancer has been established. He hesitates to personally advise the medical profession concerning preventive measures but ends his book with a quotation which counsels avoidance of heavily implicated extrinsic factors because it may be many years before the specific carcinogens necessary for direct proof are discovered.

This volume is recommended to all physicians and students of medicine.

MORTON M. ZISKIND, M. D.

Peripheral Vascular Diseases; by Edgar V. Allen, Nelson W. Barker and Edgar A. Hines, 2nd Edition, Philadelphia, Pa., W. B. Saunders Company, 1955, Pp. 825, Illus. 316. Price \$13.00.

This book covers diseases of blood vessels and lymph vessels. It is well written and illustrated and includes diagnostic methods and both medical and surgical therapy as well as some pathophysiological and historical background discussions. It is recommended for the student and practicing physician as a ready reference book of diagnostic

criteria and techniques and definitive therapy.

CHARLES C. ABBOTT, M. D.

PUBLICATIONS RECEIVED

Alomaeon Publications, N. Y.: *Opinions and Critical Judgments on Prof. G. P. Arceri's book, The Circulation of the Blood and Andrea Cesalpino of Arezzo.*

Appleton-Century-Crofts, Inc., N. Y.: *Practitioners' Conferences, Volume 6, edited by Claude E. Forkner, M. D.*

Group for the Advance of Psychiatry, N. Y.: *Psychiatric Aspects of School Desegregation, formulated by the committee on social issues.*

Grune & Stratton, N. Y.: *Gout, by John H. Talbott, M. D.; Essentials of Clinical Proctology, by Manuel G. Spiesman, M. D., and Louis Malow, M. D. (3rd edit.); Practical Refraction, by Bernard C. Gettes, M. D.*

Little, Brown & Co., Boston: *Martius' Gynecological Operations, With Emphasis on Topographic Anatomy, translated and edited by Milton L. McCall, M. D., and Karl A. Bolten, M. D., foreword by Edward A. Schumann, M. D. (7th edit.)*

The C. V. Mosby Co., St. Louis: *Synopsis of Obstetrics, by Jennings C. Litzenberg, M. D., revised by Charles E. McLennan, M. D. (5th edit.); Atlas of Clinical Endocrinology, by H. Lissner, M. D., and Roberto F. Escamilla, M. D.; Modern Therapy in Neurology, edited by Francis M. Forster, M. D., with foreword by H. Houston Merritt, M. D.*

Philosophical Library, N. Y.: *William Harvey, His Life and Times: His Discoveries: His Methods, by Louis Chauvois; Epilepsy, Grand Mal, Petit Mal Convulsions, by Letitia Fairfield, M. D.*

W. B. Saunders Co., Phila.: *Textbook of Pathology, With Clinical Applications, by Stanley L. Robbins, M. D.; Therapeutic Exercise for Body Alignment and Function, by Marian Williams, Ph.D., and Catherine Worthingham, Ph.D.; The Principles and Methods of Physical Diagnosis, by Simon S. Leopold, M. D. (2nd edit.); Gifford's Textbook of Ophthalmology, by Francis Heed Adler, M. D.; (6th edit.); The Treatment of Burns, by Curtis P. Artz, M. D., and Eric Reiss, M. D.; A Textbook of Histology, by Professors Alexander A. Maximow and William Bloom (7th edit.).*

Stanford University Press, Stanford, Calif.: *Health Yearbook, 1956, compiled by Oliver E. Byrd, M. D.*

Charles C Thomas, Publisher, Springfield, Ill.: *Magnetic Removal of Foreign Bodies, by Murdock Euen, M. D.; The Diagnosis and Treatment of Endocrine Disorders in Childhood and Adolescence, by Lawson Wilkins, M. D. (2nd edit.); The Early Diagnosis and Treatment of Acoustic Nerve Tumors, by J. Lawrence Pool, M. D., and Arthur A. Pava, M. D.; Blood Transfusion in Clinical Medicine, by P. L. Mollison, M. D. (2nd edit.).*

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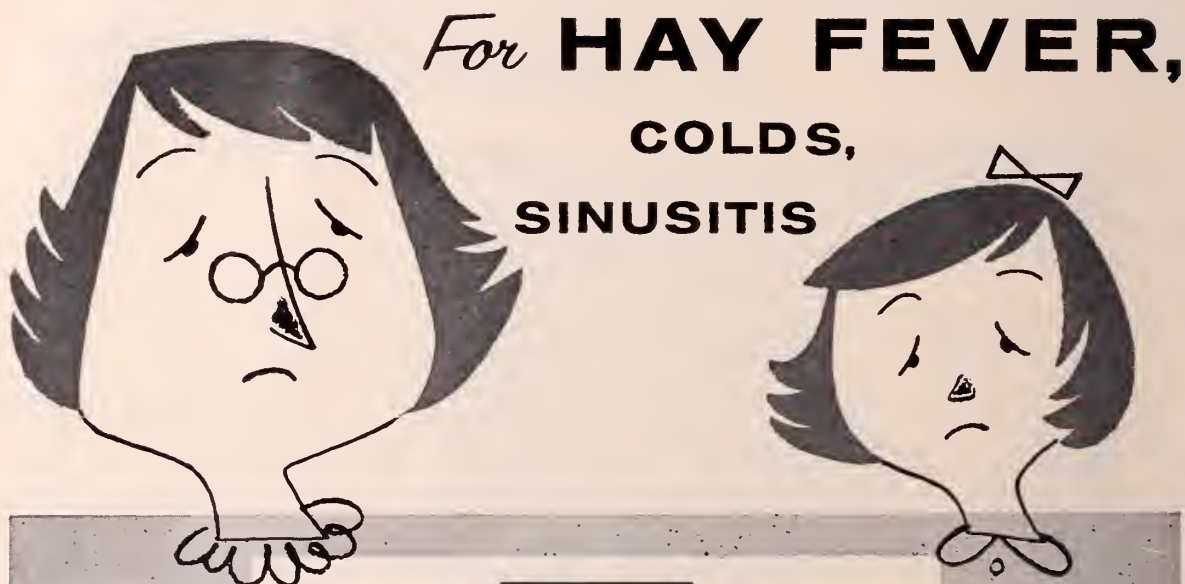
gens and favors the growth of protective Döderlein bacilli.

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1. Pitt, M. B.: Leukorrhea. Causes and Management, J. M. A. Alabama 25:182 (Feb.) 1956.

2. Parker, R. T.; Jones, C. P., and Thomas, W. L.: Pruritus Vulvae, North Carolina M. J. 16:570 (Dec.) 1955.

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Levin, S.J.: *Pediat. Clin. North America* 1:975, Nov., 1954.

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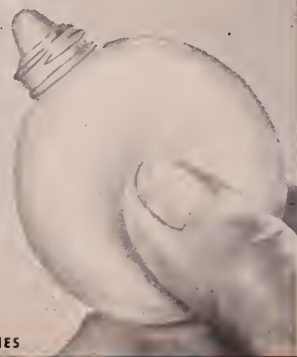
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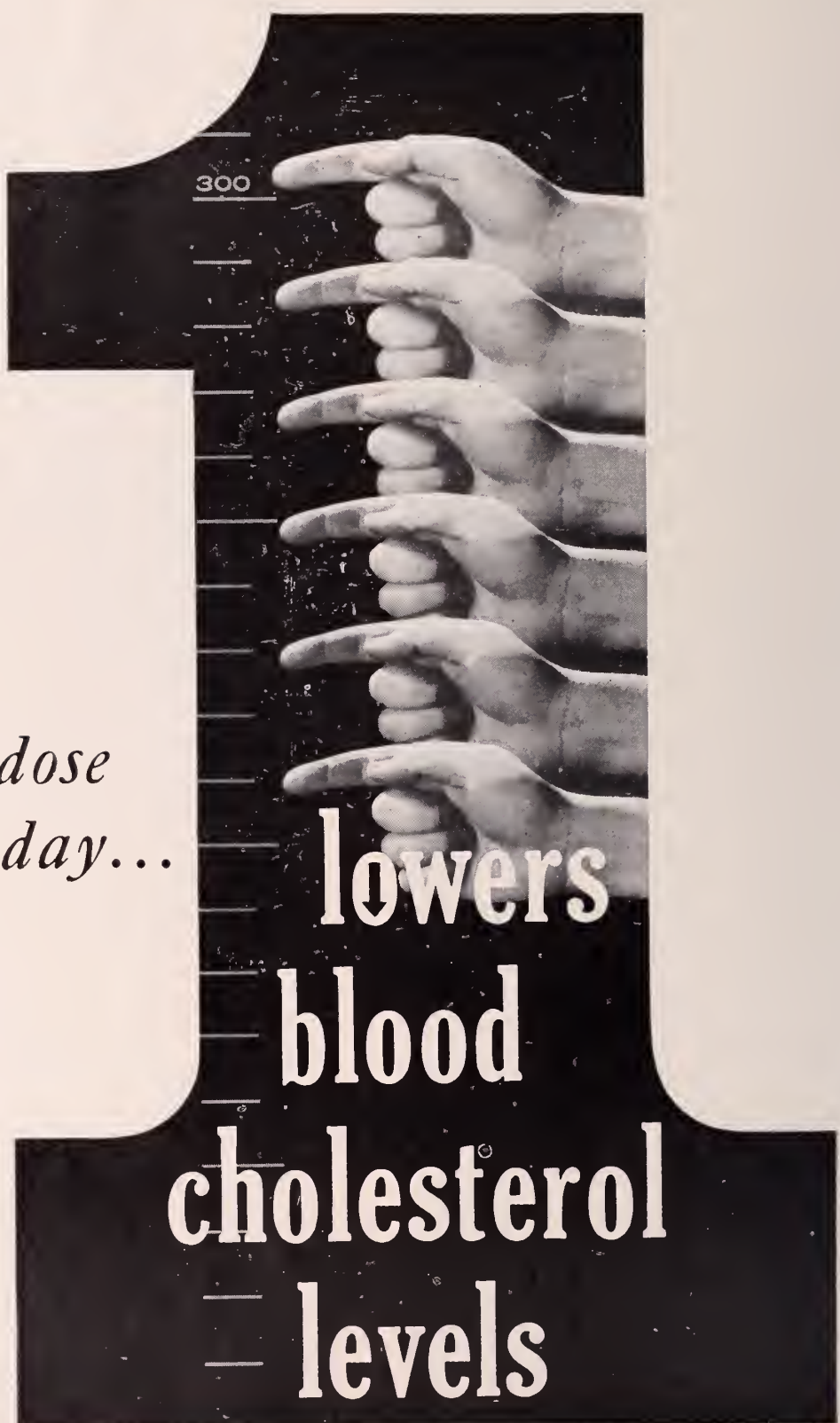
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MAJESTIC HOTEL — LAKE CHARLES
September 13 & 14, 1957

Friday, September 13, 1957

MORNING SESSION

9:00 - 9:30

Opening Ceremonies

9:30 - 10:00

"Pitfalls in the Early Diagnosis of Gynecological Malignancies"

Milton L. McCall, M. D.—Chairman, Department of OB-Gyn, L.S.U. School of Medicine, New Orleans, Louisiana

10:00 - 10:30

"Outpatient Management of Hypertension"

John Moyer, M. D.—Chairman, Department of Medicine, Hahnemann Medical College, Philadelphia, Pennsylvania

10:30 - 10:45

Visit Exhibits

10:45 - 11:15

"Anxiety Heart Disease"
 Don Chapman, M. D.—Professor of Medicine, Baylor University, Houston, Texas

11:15 - 11:45

"Common Duct Stone"
 Robert M. Moore, M. D.—Chairman, Department of Surgery, University of Texas, Medical Branch, Galveston, Texas

12:30 - 2:00

Round Table Luncheons

AFTERNOON SESSION

2:00 - 2:30

"Rhiniologic Diagnosis—Present Status"
 Ralph Riggs, M. D.—Department of ENT, Confederate Memorial Medical Center, Shreveport, Louisiana

2:30 - 3:00

"The Interpretation of Chest Films in Pediatrics"

Vincent P. Collins, M. D.—Professor of Radiology, Baylor University College of Medicine, Houston, Texas

3:00 - 3:30

"The Practical Diagnoses of Bleeding Disorders"

Jack Abbott, M. D.—Pathologist and Director of Laboratories, Methodist Hospital and Baylor University College of Medicine, Houston, Texas

3:30 - 3:45

Visit Exhibits

3:45 - 5:00

Medical and Surgical CPC's

Saturday, September 14, 1957

MORNING SESSION

9:00 - 9:15

Visit Exhibits

9:15 - 9:45

"Splenectomy"

Robert M. Moore, M. D.

9:45 - 10:15

"The Importance of Geriatric Gynecology"

Milton L. McCall, M. D.

10:15 - 10:45

"The Role of Surgery in Heart Disease as Seen by a Cardiologist"

Don Chapman, M. D.

10:45 - 11:00

Visit Exhibits

11:00 - 12:00

Panel Discussion

"Diagnosis and Management of Thyroid Diseases"

Moderator: Don Chapman, M. D.

Panelists: John Moyer, M. D., Jack Abbott, M. D., Vincent P. Collins, M. D., Robert M. Moore, M. D.

12:30 - 2:00

Round Table Luncheons

AFTERNOON SESSION

2:00 - 2:30

"The Practical Approach to Everyday Urology Problems"

Robert K. Womack, M. D.—Head of Department of Urology, Confederate Memorial Medical Center, Shreveport, Louisiana

2:00 - 3:00

"Laboratory Aids in the Diagnosis of Endocrine Disorders"

Jack Abbott, M. D.

3:00 - 3:15

Visit Exhibits

3:00 - 3:45

"Ataractic Agents, Their Use in Clinical Medicine and Comparison with Standard Neuro-sedatives"

John Moyer, M. D.

3:45 - 4:15

"The Role of Radiotherapy in the Treatment of Breast Cancer"

Vincent P. Collins, M. D.

4:15 - 4:45

"Symptoms and Treatment of Nasopharyngeal Disease"

Ralph Riggs, M. D.

7:30

Cocktails and Dinner Dance

Note: Entertainment and Luncheons planned for visiting wives

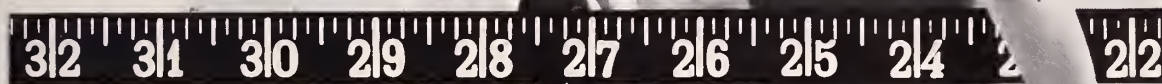
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References: (1) Halt, J. O. S., Jr.: Dallas M. J. 42:497, 1956. (2) Gelvin, E. P.; McGavack, T. H., and Kenigsberg, S.: Am. J. Digest. Dis. 1:155, 1956. (3) Notenshan, A. L.: Am. Pract. & Digest Treat. 7:1456, 1956.

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(1) Boger, W. P.; Strickland, C. S. and Gylfe, J. M.: *Antibiot. Med. & Clin. Ther.* 3:378 (Nov.) 1956.

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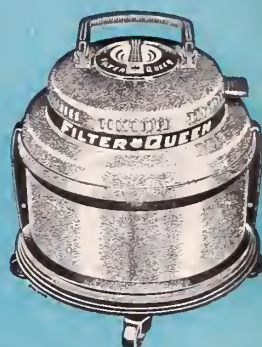
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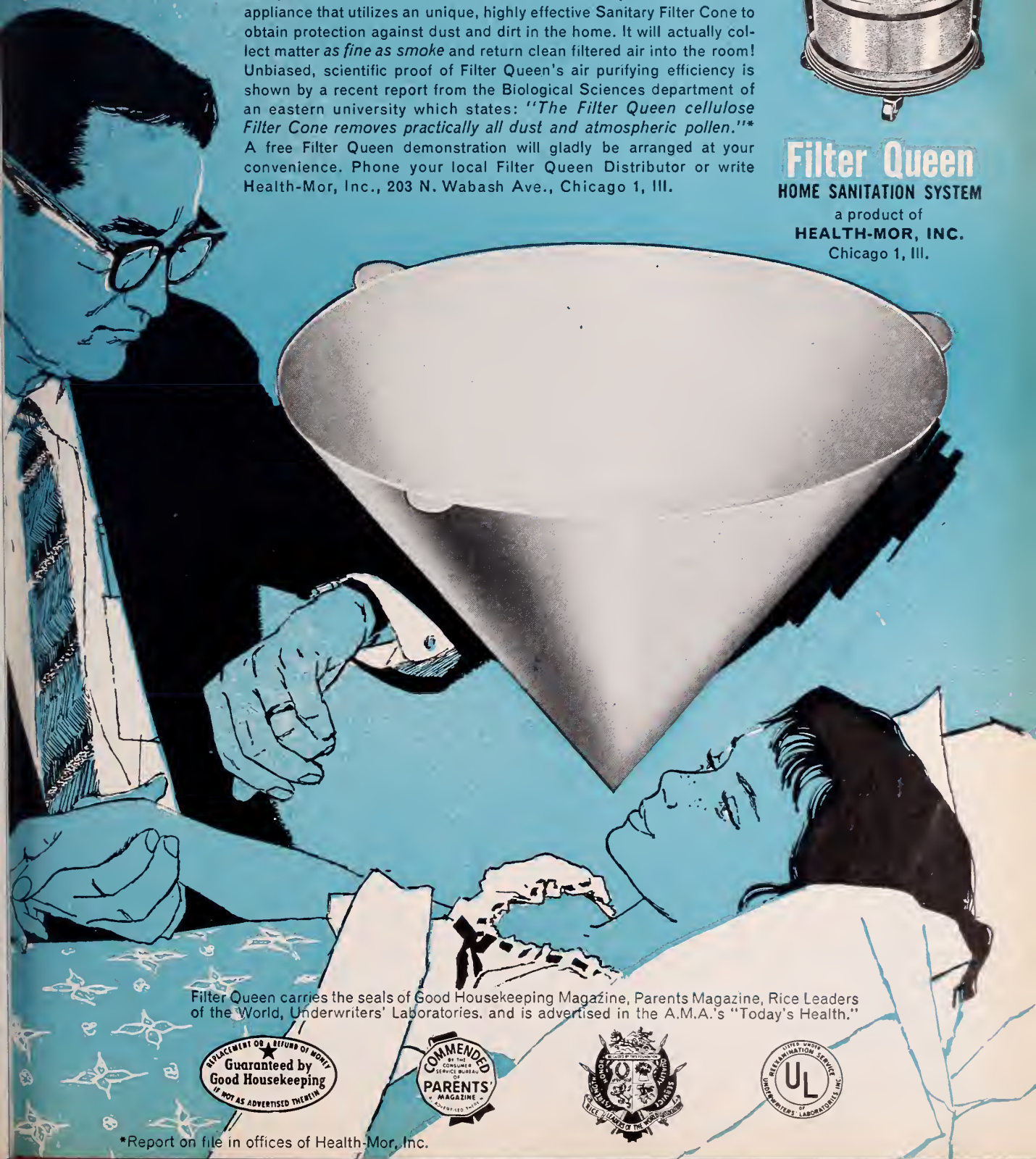
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"Perhaps the most exciting aspect of occupational cancer is the fact that once the nature of the carcinogenic materials is understood, and the nature of the exposure has been learned, it should be possible to develop ways of eliminating or minimizing the exposures and thus preventing the cancers. The approach developed by Standard Oil Company (New Jersey) and its affiliates to the problem, would probably interest others concerned with the development of programs to prevent occupational cancer."

The article, "Research in Occupational Cancer Control", which appears in "CA: A Bulletin of Cancer Progress", May 1957, published by the American Cancer Society, outlines what seems to be a reasonable program for prevention or early recognition of Occupational Cancer.

* Synthesized from conferences among Ralph F. Schneider, M.D., Medical Director, Standard Oil Company (New Jersey); Leo J. Wade, M.D., Medical Director, Esso Standard Oil Company; and Robert E. Eckardt, M.D., Ph.D., Director Medical Research Division, Esso Research and Engineering Company, Linden, New Jersey.



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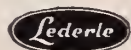
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In Fiskio's study,¹ "Premarin" with Methyltestosterone effectively relieved postpartum breast engorgement and suppressed lactation in 96.2 per cent of his group of 267 patients. Notably absent were breast abscesses, nausea, vomiting, excessive lochia, withdrawal bleeding or virilization. Menses were re-established after the normal six week period. The lack of mental depression during the puerperium was especially gratifying.

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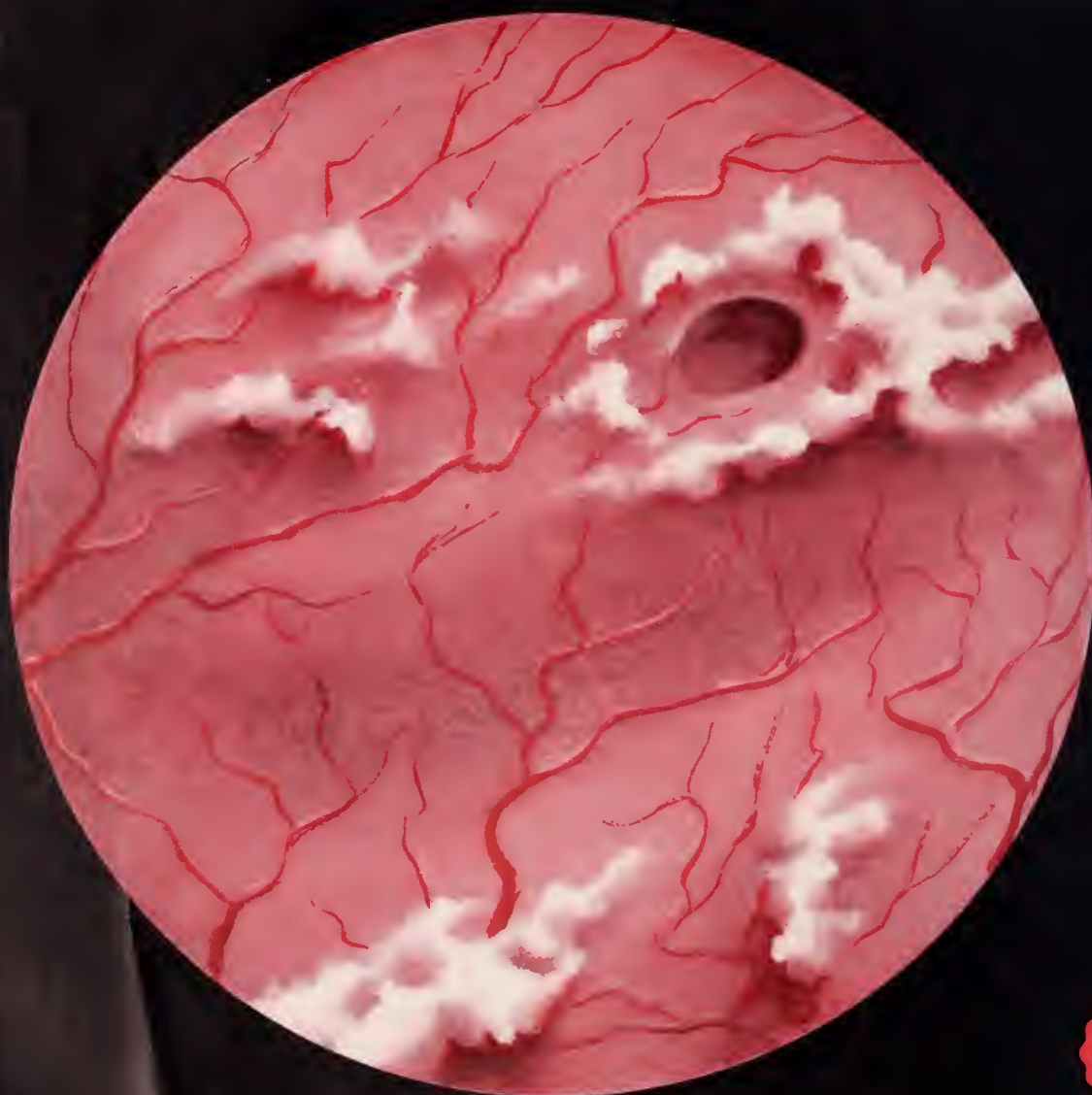
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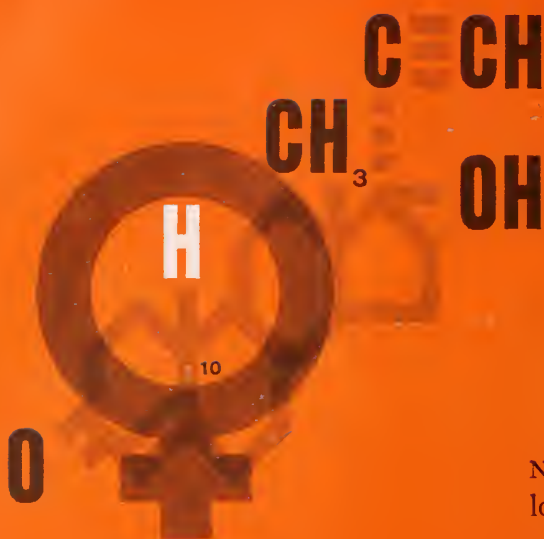
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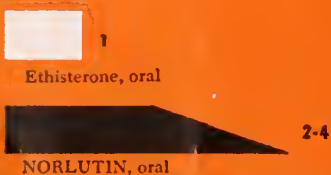
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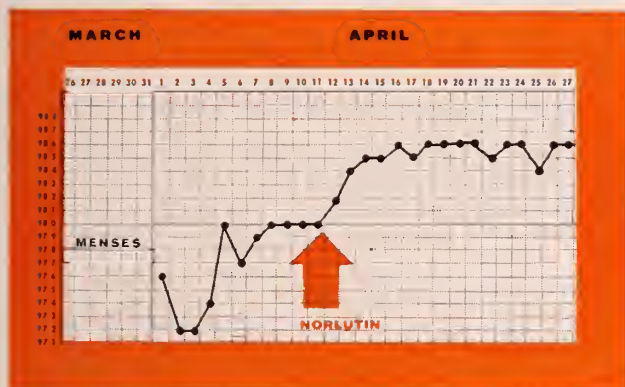
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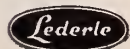
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MANAGEMENT OF POSTOPERATIVE SUBTOTAL GASTRECTOMY PATIENTS *

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The treatment of intractable peptic ulcer or complicated peptic ulcer is best accomplished by subtotal gastrectomy. The procedure is not without sequelae and the end results of the operation should be carefully considered before such surgery is recommended to the patient. Most patients who have such surgery are cured of their peptic ulcer. The exact percentage of cures is difficult to evaluate since objective study, including radiologic and endoscopic examination of the patients is not accurate. In addition to the recurrences of peptic ulcer following subtotal gastrectomy a significant number of patients develop new symptoms as a result of surgical procedure. The symptoms following removal of part of the stomach may be mild or severe. Various authors differ in their evaluation of poor results following gastrectomy for peptic ulcer. The severity of the symptoms prior to surgery and the reluctance of the surgeon to operate for mild disease will affect the results. The patient who has serious disease before surgical intervention is recommended will have the best chance to obtain benefit. In my experience there

have been many patients who have had moderate to severe postgastrectomy symptoms who have been happy with the results of surgery since their ulcer was more disabling than the postgastrectomy symptoms. Other patients with rather mild postgastrectomy complaints were unhappy because of relatively mild symptoms following surgery since their original disease was relatively mild.

In the preparation of this paper the records of 51 private patients were reviewed. These patients all had moderately to severe disabling postgastrectomy complaints. The purpose of this paper is to review some of the theoretical considerations in the production of the postgastrectomy syndrome and to correlate the theoretical considerations with clinical experiences with patients.

A single term to describe the situations that occur following surgery has not yet been coined. The expression "dumping syndrome" has been widely used. The dumping syndrome probably represents only one phase of the clinical picture that can occur following removal of a large portion of the stomach. A discussion of the changes that may occur following gastrectomy involves the consideration of many factors affecting the feeling of well being of the patient.

NUTRITION

The patients in this series have shown an average weight loss of approximately 20 pounds in relation to preoperative

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weight. The greatest loss in any individual was 80 pounds. The most favorable results from the standpoint of nutrition have been in those patients who have been somewhat overweight at the time of surgery. The poorest results have been in those patients who, at the time of surgery, were markedly underweight. Most patients who were underweight have not been able to gain weight postoperatively. Malnutrition of a marked degree was a problem in 10 patients. Eight of these malnourished patients were underweight when the surgery was performed.

Rapid transit through the gastrointestinal tract may be an important cause of the nutritional problem and may be accompanied by steatorrhea. Wollager,¹ in 1949, showed that the patients that he studied following subtotal gastrectomy excreted an abnormal percentage of fat regardless of the type of diet. Muir,² in 1949, found that 90 per cent of his patients had difficulty in gaining weight following surgery for ulcer.

Rapid emptying of the stomach and failure of proper mixing of the digestive secretions with the food bolus have been considered to be important factors in causing steatorrhea. Wells and Welbourn,³ in 1951, found that the use of hexamethonium bromide slowed transit time and increased fat absorption. The inability to gain weight in some patients has also been attributed to the fact that the afferent loop may become filled with bile and pancreatic secretions and empty only at intervals. This filling of the afferent loop may cause discomfort after eating and because of this discomfort the patients are fearful of taking a normal intake at any one meal.

ANEMIA

Anemia is seen following postgastrectomy in some patients. The anemia is usually microcytic in type and responds well to administration of iron. The incidence of the postgastrectomy microcytic type of anemia is sufficiently common that some physicians recommend intermittent administration of iron routinely

to the postgastrectomy patient. The secondary anemia is probably due to decreased absorption which may be influenced by the lack of HCl, and increased bacterial content of the small bowel. The use of hydrochloric acid or elements of the vitamin B-complex may be healthy adjuncts to the use of iron in treating the anemia seen following subtotal gastrectomy. Primary anemia is rare following subtotal gastrectomy but does sometimes occur. In total gastrectomies a primary anemia is certain to develop and usually occurs within two to four years. In our patients, there were only 8 of the 51 with a significant anemia. Anemias are usually not a serious problem since the response to simple therapy is adequate.

POSTCIBAL DISTRESS

Distress that occurs immediately following meals has given rise to the term dumping syndrome. Dumping was originally a radiological term. The exact meaning of the dumping syndrome is not clear. Frequently, both the early and the late symptoms following meals are associated with the term dumping syndrome.

For clarification of the symptoms and abnormal physiology, postcibal distress may be divided into three groups: first, the early complaints which occur the first sixty to ninety minutes after meals and are usually mechanical in origin. Second, the late symptoms occurring from one and one-half to two and one-half hours after meals usually of chemical origin and are associated with hypoglycemia. Third, the so-called "afferent loop syndrome" or "bilious vomiting" which creates increasing discomfort over a period of days and is probably due to progressive distention of the afferent loop. These three groups will be considered separately.

EARLY POSTCIBAL SYMPTOMS

The occurrence of the early postcibal distress has been attributed to mechanical factors. Rapid emptying of the gastric remnant and jejunal filling with the bolus of food may be a cause of discomfort. A similar type of distress may also occur

with edema or other obstruction of the stoma leading to marked delay in emptying of the gastric remnant. The symptoms which arise immediately after a meal usually last from fifteen to forty-five minutes. The common symptoms are a feeling of epigastric fullness, nausea, weakness, gas, palpitation, sweating and sometimes a feeling of faintness. These symptoms are often relieved if the patient lies down and are aggravated by the administration of more food. Glaessner, in 1910,⁴ noted that there was nearly always hyperglycemia coincident with the early postcibal distress.

The physiological basis of the complaints is not clear but there have been many theories proposed to explain these symptoms. Machella,⁵ in 1947, was able to demonstrate that jejunal distention could produce a typical early postcibal disturbance. He was able to produce this discomfort by the introduction of hypotonic solutions into the jejunum of postoperative patients as well as of normal individuals. He felt that the osmotic effect of the hypotonic solutions drawing fluids into the jejunum produced a mechanical distention which automatically produced the discomfort seen in the postgastrectomy patient. Butler and Capper,⁶ in 1951, were able to produce the typical postcibal symptoms in 79 patients by distention of the jejunum and they also were able to produce the symptoms by torsion of the stomach stump by placing a mercury filled bag in the gastric remnant. The discomfort would be more noticeable when the patient was in the erect position. The swallowing of barium may also produce the early symptoms of the postgastrectomy syndrome. Capper,⁷ in 1952, demonstrated that a gastric stoma may descend an average of 7 cm. on changing from the supine to the erect positions. If one assumes that the gastroesophageal junction is a fixed point then this change of position represents stretching of the stomach. The distress that can be produced by a mercury weight in the gastric remnant will always be relieved by having the pa-

tient lie down. The same amount of mercury does not produce symptoms in control patients who have not had gastrectomies. Splanchnic block relieved the symptoms in 77 per cent of the patients with symptoms caused by the mercury weight in the gastric remnant. Splanchnic block tried in 61 patients with the early postgastrectomy syndrome produced relief in 46 patients for from two to nine days and 4 of the 61 cases received complete relief by the block. The distress produced by distention of a balloon in the jejunum is unaffected by posture.

The above observations led Capper to postulate that the anatomy of the postgastrectomy stomach may play an important part in the production of symptoms. Normally, the stomach is fixed at its extremities and the lesser omentum supports the lesser curvature by way of the thickening that occurs around the left gastric vessels. Following high gastric resections the gastric remnant is unsupported. This unsupported remnant has the anastomosis hanging from it with the U-shaped afferent loop. The afferent loop may be weighted down with digestive juices and possibly reflux of food as well. It has been demonstrated under local anesthetic that traction on the stomach will produce the feeling of distention, nausea, and retching. Splanchnic block abolishes the above symptoms. Traction on the vagus does not have a similar effect. It is felt therefore that the syndrome is not mediated via the vagus nerve. Jordon, Overton and Debakey⁸ have presented a different theory related to the dumping syndrome. They noticed that the chief symptoms experienced either singly or in combination were increased pulse, weakness, nausea, sweating, vomiting, vertigo, diarrhea, and abdominal cramps. They carefully studied 20 patients, 5 of whom had intestinal continuity re-established by gastroduodenostomy, and 15 by gastrojejunostomy. They placed a balloon 12 inches beyond the gastrointestinal stoma. They found that when the balloon was distended the first symptom produced

was pain. This distention did not produce the usual postcibal syndrome in any of the patients. They then injected hypertonic solutions and found that they could always produce the postcibal complaints by the administration of the hypertonic glucose solution in the jejunum and also by a test meal containing fat, protein, and a hypertonic glucose material. A protein solution alone did not produce complaints in most of the patients. They were able to show that the patients who developed symptoms showed varying degrees of hypermotility and that in symptomatic patients the use of antispasmodics produced an irregularly beneficial effect. They found that partial or complete relief of symptoms occurred in 81 per cent of the patients in whom they could demonstrate that drugs inhibited motility by 50 per cent or more. They therefore postulated that hypermotility is important in the production of postcibal complaints of nausea, vomiting, and diarrhea.

Kleiman and Grant,⁹ postulated that low potassium levels caused early postcibal complaints. They point to the fact that ingestion of food, rich in sugar, is the most common trigger to the syndrome. They noted that the attacks frequently occur during the hyperglycemic period and have noted associated electrocardiographic changes—notably shortening of the QT interval and depressed T waves which they interpreted as consistent with hypokalemia. The suggestion is made that the dumping attack is caused by the sudden shift of potassium from the extracellular fluid into storage in the liver with glucose. The authors were unable to demonstrate serum potassium changes but did show that 10 patients who were given 10 grains of potassium chloride twenty minutes before meals showed marked improvement. Smith, et. al.,¹⁰ also studied the postprandial attacks of palpitation and weakness in relation to potassium. They were not able to demonstrate a direct relationship to potassium from the standpoint of the early complaints but noticed that the weakness following the

attacks was greatly diminished if potassium chloride was given orally and more so if given intravenously. Muncke¹¹ and Roberts¹² studied postgastrectomy symptoms also in relation to potassium. Muncke did intravenous glucose tolerance tests on the patients and also used hypertonic glucose administered by mouth. During the oral glucose tolerance test there was no alteration in the concentration of serum potassium and the serum potassium did not vary in relation to the attacks. He did notice, however, electrocardiographic changes similar to those described by Smith and Kleiman. He stressed the difficulty of distinguishing electrocardiographically between increased adrenalin concentration and a hypokalemia. Muncke stated that considering the various aspects of the clinical picture that the rise in blood pressure, the tachycardia and the vasomotor symptoms made it seem reasonable to attribute the changes to an increased sympathetic tonus. Intravenous glucose tolerance tests indicated that the intermediate carbohydrate metabolism is normal. He felt that attacks were due to increased sympathetic tonus and this was stimulated by chemical agents, particularly hypertonic glucose.

Roberts, Randall and Farr,¹³ also studying the changes in electrocardiograms, electrolytes, and the use of hypertonic glucose solutions found that the blood volume was markedly diminished after oral administration of hypertonic glucose solutions to patients after gastrectomy and they felt that the drop in blood volume was a causative factor in the symptoms of the dumping syndrome. Their findings showed that patients with intact stomachs did not display the above described physiological alterations indicating that the solutions did not enter the intestine with the rapidity with which they did in gastrectomized stomachs. The well-known function of the stomach as a gastric reservoir provides the protection against rapid dilution or breakdown of food stuffs.

LATE POSTGASTRECTOMY COMPLAINTS

The late postgastrectomy symptoms usu-

ally occur two to three hours after a meal. In a typical day, the distress may occur at 11 A.M., and 3 P.M. and is more likely to occur if the patient is quite active. The symptoms consist of tremor, giddiness, profuse perspiration. There may be marked anxiety and exhaustion. Nausea and hunger may be present with a feeling of emptiness in the abdomen. In the severe cases, marked palpitation, faintness and even loss of consciousness may occur. The physical findings consist of tachycardia, fall in blood pressure, pallor, sweating and tremor. Glycosuria and diuresis may occur and in most instances hypoglycemia is present. This secondary hypoglycemic reaction usually disappears in two to five years following surgery. There have been many theories as to the cause of this hypoglycemia and accompanying symptoms. Zollinger¹⁴ in 1947, noted that when these patients developed weakness and sweating two hours after meals they almost always had a hypoglycemia. In 1942, Evensen,¹⁵ observed that hypoglycemia disappeared in a very significant number of patients if the gastrojejunal anastomosis was undone and normal continuity was established. Temporary inhibition of glycogenolysis of the liver may occur due to the transient high portal hyperglycemia following the rapid absorption from the intestine. Smith,¹⁰ et. al., by doing insulin tolerance tests on patients found that patients liable to hypoglycemic attacks were characterized by an abnormal persistence of hypoglycemia on the intravenous insulin tolerance test. In our patients, 12 of 51 showed the late (hypoglycemic) symptoms and these were severe in only 4 instances.

AFFERENT LOOP SYNDROME

English authors refer to "bilious vomiting" as being separate from the usual early or late postcibal complaints. Wangenstein,¹⁶ in 1945, and Ingelfinger,¹⁷ in 1944, both pointed out that reflux of food into the afferent loop may be a cause of postcibal distress. The afferent loop syndrome is produced by gradual filling of the afferent loop with a mixture of food,

bile, pancreatic secretions and intestinal secretions. With this filling of the afferent loop the patient will develop gradual postcibal distress which becomes more marked after each meal. After a few days he will vomit large amounts of liquid bile staining material not containing food and obtain relief for several days to weeks. The vomiting is often precipitated by changes in posture, especially stooping. The cyclic character of this symptoms complex is believed by some to be due to gradual accumulation of fluids in the afferent loop.

RECURRENCE OF ULCER

One of the most discouraging postgastrectomy findings is the recurrence of peptic ulcer. In our group of patients there were 5 patients who had a recurrent peptic ulcer following subtotal gastrectomy. Marginal ulcers most often occur on the jejunal side of the anastomosis and usually occur within the first 5 cm. of the jejunum or of the duodenum if the gastrectomy has been completed with a gastroduodenostomy. In some instances, however, the ulcer may be on the gastric side.

The cause of recurrences has been studied by many authors. Zollinger and Ellison¹⁸ have recently demonstrated the existence of islet cell tumors of the pancreas containing Beta cells, occurring along with recurrent ulcers associated with high gastric resection. Since their original paper, other authors have also found that they had cases where recurrent ulcers following surgery have also been accompanied by islet cell tumors of the pancreas. These islet cell tumors have not been insulin producing tumors. Zollinger has postulated with inconclusive evidence that these islet cell tumors secrete glucagon and that the glucagon may be the ulcerogenic factor of pancreatic secretion. Zollinger and Ellison quote the work of Dragstedt¹⁹ and Elman²⁰ in which these authors demonstrated that spontaneous duodenal ulceration nearly always occurs with the diversion of pancreatic secretions from the duodenum

while ulceration of the duodenum rarely occurs following total pancreatectomy. Poth²¹ has shown that there is an increase in gastric secretion as the hyperglycemia induced by glucagon subsides.

The following two case histories from our group are typical examples of a severe ulcer problem with recurrence following gastrectomy. The first patient has not been investigated from the standpoint of pancreatic tumor and the second was investigated at the time of her surgery and no tumor could be found. At this time, however, it is the opinion of some of the surgeons who have seen her that she should have a subtotal pancreatectomy with the strong possibility that there is an islet cell tumor present.

I. C. 28 year old colored female, in 1953 had onset of ulcer type pain. Early in 1955 she had massive gastrointestinal hemorrhage and in March, 1955, a subtotal gastric resection with a gastrojejunostomy was performed. She had secondary surgery three weeks later because of an abscess in the abdomen. In December, of 1955, she had recurrence of pain with tarry stools and a diagnosis of a marginal ulcer. In January, 1956, she had a transthoracic vagotomy. In August, 1956, she was admitted to the hospital pregnant, with a severe anemia, and in September, 1956, delivered a normal infant. At this time she required numerous transfusions. In December, 1956, a 1.5 cm. ulcer crater was demonstrated distal to the stoma. She was placed on a medical regime but on December 29th, 1956, was re-admitted for the ninth time for a bleeding ulcer. On January 22nd, 1957, surgery was performed with a combined abdominal thoracic incision. The pancreas was completely explored and found to be normal. The gastric jejunostomy was resected and the gastric remnant anastomosed to the duodenum. On February 12th, 1957, she had abdominal surgery because of a suspected abscess and a white blood count of 49,000. No definitive procedure was done at this time. February 19th, 1957, she had massive bleeding again and at this time complete hematology studies revealed no abnormality other than hypercoagulability of the blood. On March 8th, 1957, she was feeling well and was discharged from the hospital. The surgeons suggested at the time of discharge that she should be re-admitted with consideration of a total gastrectomy and partial pancreatectomy.

J. C., 51 year old white male, who in 1947 gave a 6 year history of typical ulcer pain. In addition to severe ulcer pain he had become moderately addicted to narcotics. In 1947, he had a subtotal gastrectomy (Polya type). By July of that year

he had recurrence of his ulcer pain and in October an ulcer was visualized at gastroscopy. By this time, he had a return of hydrochloric acid secretion with 1200 cc. of nocturnal secretion containing 100 units of free hydrochloric acid. In November, he visited another Clinic at which time an ulcer was not demonstrated and a bilateral splanchnic block was performed. He developed an abscess at the site of injection with no relief of his pain. In February, 1948, having continued to have pain, he had a massive hemorrhage and had to have several transfusions. Between February and June he was treated at his home with diet and again began to need narcotics. In June of 1948 he was treated with Enterogastrone without distinct benefit. He was given a rigid ulcer management without great relief and surgery was offered to him at this time. He declined. In October, he was admitted to a mental institution because of extreme anxiety and pain with uncontrollable emotional outbursts. At this sanatorium a mass was felt in his abdomen and the radiologist thought he had neoplasm in his stomach. In November, he went to Boston and had an initial operative procedure consisting of draining of the abscess and this was followed by a second resection of the stomach. His course since that time has been fairly good.

THERAPY

The treatment of patients with post-gastrectomy symptoms is difficult and involves many factors. These patients frequently have a nutritional problem. Hayes²² has been able to demonstrate that weight can be controlled if careful attention is given to diet. He points out that the oral administration of hypertonic glucose solution or protein hydrolysis produces an immediate increase in jejunal motility and these substances should be avoided. He also shows that in patients who have a gastric resection that the satiety value of high fat content in the diet it to a large extent lost and that high fat diets can easily be fed to these patients. He found that a diet of high fat, high protein content would be slowly hydrolyzed and should be fed with maximum exclusion of carbohydrates. The administration of liquids should be given between feedings. If the patient has discomfort soon after eating he may be relieved by lying down after meals. Some patients may even have to eat their meals lying down.

Mills²³ has shown that due to mechani-

cal reconstruction following gastrectomy, bile and pancreatic juices must pass through the stump of the stomach before entering the efferent loop. This volume of food is augmented by the gastric secretion from the stump of the stomach and saliva. A conservative estimate of the combined secretions passing through the stomach would amount to 2 to 3,000 cc. A high percentage of this fluid is secreted at meal times during the day. The volume of these juices plus food and liquid ingested is more than the stump can accommodate. He feels that a dry diet is for this reason quite important, and he recommends a dry diet with 4 to 5 feedings per day. He finds that a carminative mixture given one-half hour before meals tends to trigger the gallbladder and stimulate the pancreatic juices and then these secretions go through the stomach ahead of the meal in a more normal physiological relationship. Some of his patients used beer for this purpose.

Various drugs have been used to treat the early postgastrectomy complaints including the anticholinergic to slow down motility. Potassium chloride is used with the idea that benefit may be obtained by preventing the lowering of potassium levels in the blood that have been postulated. The ingestion of large amounts of liquids, one-half hour to twenty minutes before meals, may prevent the decrease in blood volumes that occur in some instances. Urecholine has been used with some benefit perhaps because of its effect on emptying the afferent loop. Glucagon has been used with some benefit in relation to the early complaints, probably because of its effect on reducing gastric motility. (Thomas Witten, Denver VA,²⁴ personal communication.)

The treatment of the late postprandial complaints, namely the hypoglycemic symptoms, is more difficult. Frequent feedings will help to prevent the onset of hypoglycemia and rest is often helpful. When this complaint is severe it becomes quite disabling since activity increases the frequency and severity of these symptoms.

Fortunately, this abnormal physiological situation usually disappears within the first year following surgery.

The treatment of the anterior loop syndrome consists of measures to empty the afferent loop and if possible to prevent the accumulation of material in this blind pouch. Lying down one-half hour prior to meals and the use of carminative mixtures before meals may help to prevent the development of progressive nausea. The use of dry feedings is frequently beneficial. Capper and Welbourn²⁵ recommend sodium bicarbonate taken one-half hour before meals to stimulate the emptying of the duodenum.

If the symptoms of the postgastrectomy syndrome persist and are disabling surgical intervention may be indicated. The surgical procedures which are most frequently employed are conversion of gastrojejunostomy to gastroduodenostomy, revision of the stoma, and supporting the lesser curvature.

SELECTION OF PATIENTS FOR SURGERY

A most important factor in prevention of severely disabling postoperative complaints is the selection of proper patients for surgery. Patients who have been seriously ill or have serious complications from ulcer will usually tolerate postgastrectomy complaints well. Patients who are operated upon for minimal indications will tolerate postgastrectomy complaints poorly. It is difficult to generalize but it is probably safe to say that the younger patient with a high nocturnal secretion is more likely to have a recurrent ulcer than the older patient with the low acid value. The nervous, high strung individual with a labile vascular system is more likely to develop postgastrectomy complaints of a more severe nature than the placid individual. The well-nourished person is less likely to have serious nutritional problems postoperatively. Surgeons usually state that the surgery is a failure when the postoperative complaints are more severe than the original ulcer. With the knowledge that the removal of part of the stomach may produce symptoms, the pa-

tient with an ulcer should not be treated surgically unless his symptoms are severe and intractable or threaten his life.

The problem of intractability of the ulcer or the patient presents a serious problem. The intractability of the ulcer should in most instances be the determining factor. An intractable patient without serious ulcer complications is likely to be very difficult to manage if he has postgastrectomy complaints. The following case history presents an illustration of intractability.

White man, 42 years old, was admitted to the hospital with an ulcer type pain, relieved by food and alkali. He had a previous diagnosis, two years before, of a duodenal ulcer and had one episode of mild hemorrhage. In the succeeding two years he had had recurrences of his ulcer during episodes of heavy drinking. For six weeks prior to his admission to the hospital the intake of food had been inadequate and his intake of alcoholic liquor excessive. In addition, he had several encounters with the law. At the time of admission to the hospital he had been transferred from the jail to the hospital. Because of the above history the surgeons felt that this was an intractable ulcer and a subtotal gastrectomy was performed. The patient had a relatively uneventful postoperative course and was discharged back to jail and served a two year federal prison sentence. During the time of his imprisonment he had few gastrointestinal complaints. On his release from prison he continued his previous extracurricular activities including heavy drinking, and excessive smoking. He ate poorly and had numerous exciting encounters with the police. In this situation he developed recurrent abdominal pain, nausea, vomiting, and had two massive gastrointestinal bleeding episodes. On return to the hospital he gradually responded to medical management and after several months was in condition to be discharged. At this time he was thirty pounds under his average weight. He was not subject to further imprisonment and without the security of prison he had a poor prognosis.

This patient illustrates the fact that if the intractable personality can be controlled the patient will respond well to medical or surgical therapy. Medical treatment of ulcer in an intractable patient does not have the potential risk that surgery has in the intractable patient with an uncomplicated ulcer.

Careful selection of patients for surgery is the best means of avoiding serious postgastrectomy problems. Recommenda-

tions for surgery should be based on the pathology not the personality. The intractable person may develop such serious complications of his ulcer that removal of part of the stomach is necessary. Occasionally this type of patient will have no postoperative problems. The postoperative patient will be happy despite some discomfort if his original disease was severe.

SUMMARY

A discussion of the theoretical factors in relation to the postgastrectomy symptoms has been presented along with a summary of the findings in 51 patients with postgastrectomy complaints. To date there is no uniformly successful treatment of the postgastrectomy symptoms. Careful evaluation of the patient's symptoms and detailed attention to their diet and medical management will, however, bring about a satisfactory result in the management of most patients. Great care in selection of patients for surgery is the best prophylactic measure in preventing disabling postgastrectomy results.

REFERENCES

1. Wollager, E. E.: (1949). *Proc. Amer. Gastroent. Ass.* June 4th, 1949.
2. Muir, A.: (1949). *Ibid.*, 37:165.
3. Wells, C., and Welbourn, R.: (1951). Personal communication.
4. Glaessner, C. L.: *Rev. Gastroent.* 7:528, 1940.
5. Machella, T. E.: *Proc. Amer. Gastroent. Ass.* June 4th, 1949.
6. Butler, T. J., and Capper, W. M.: *Brit. M. J.*, 1:1177; 2:265, 1951.
7. Capper, W. M.: *Modern Trends in Gastroenterology*, London, Butterworth & Co. pp. 459, 1952.
8. Jordan, Jr., G. L., Overton, R. C., and DeBakey, M. E.: *Ann. S.*, 145:4, 1957.
9. Kleiman, A., and Grant, A. R.: *Surg. Forum*, 4:296, 1953.
10. Smith, W. H., Frazer, R., Staynes, K., and Willcox, J. M.: *J. Med.*, 22:381, 1953.
11. Muncke, Ole: *Acta Medical Scandinavica*, 148:329, 1954.
12. Roberts, K., Randall, H. T., Farr, H. W., Kidwell, A. D., McNeer, G. P., Pack, G. T.: *Ann. Surg.*, 140:631, 1954.
13. Roberts, K. E., Randall, H. T., Farr, H. W.: *Surg. F.* 4:301, 1953.
14. Zollinger, R. M., Ellison, E. W.: *Trans. Amer. Surg. Ass.*, 73:390, 1955.
15. Evensen, O. K.: *Acta med. Scand.*, Suppl. 126, 1942.
16. Wagensteen, O. H.: *Can. Med. Ass. J.*, 53:309, 1945.
17. Ingelfinger, F. J.: *New Eng. J. Med.*, 231:321, 1944.
18. Zollinger, R. M., Ellison, E. W.: *Trans. Am. Surg. Asso.* 73:390, 1955.

19. Dragstedt, L. R., Montgomery, M. L., Ellis, J. C.: *Proc. Soc. Exper. Biol. & Med.* 28:109, 1930.
20. Elman, R., and Marman, A. F.: *Arch. Surg.* 23: 1030, 1931.
21. Poth, E. J., Manhoff, L. J. and DeLoach, A. W.: (1948) *Surgery* 24:62.
22. Hayes, Mark A.: *J. Surg.* 37:793, 1955.
23. Mills, J. G.: *Can. Med. Asso. J.* 69:237, 1953.
24. Witten, Thomas: (1957) Personal communication.
25. Capper, C. Melville, and Welbourn, Richard E.: *Brit. J. of Surg.* 43:24, 1955-56.

TRAUMATIC VENTRICULAR SEPTAL DEFECT: REPORT OF A CASE TREATED SUCCESSFULLY *

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NEW ORLEANS

Defects of the ventricular system occur as a relatively common congenital malformation.¹ They were formerly of little surgical significance, inasmuch as a reasonably safe approach to their closure had not been developed. In recent months, however, with the use of several types of extracorporeal circuits, it has been possible to effect a closure of such defects within a reasonable range of mortality. Acquired ventricular defects by nature of their etiology carry a far more serious prognosis. They may result from dissolution of a portion of the septum secondary to the infarction of coronary thrombosis,² or they might result from trauma, usually from a penetrating type wound, although rupture of the septum might occur with a crushing or nonpenetrating type of injury. Bender³ recently reported a case of an acquired ventricular septal defect which was secondary to blunt trauma of the chest, but which was not evidenced until two weeks following the accident, and was thought to be a late perforation of the septum secondary to ischemic necrosis. Defects of the septum secondary to myocardial infarction are of course extremely poorly tolerated and to our

knowledge, successful closure of such a defect has not been achieved, the life expectancy following their appearance usually being measured in days rather than months or years. We have not observed a defect due to nonpenetrating trauma. Recently, however, a case was admitted to the Tulane Surgical Service of Charity Hospital in which a clinical diagnosis of traumatic ventricular septal defect was made, and in which successful closure of the defect was achieved utilizing techniques similar to those employed in correction of congenital defects. The case will be reported in detail.

CASE REPORT

M. D., a 21 year old Negro male was brought to Charity Hospital on July 1, 1956, approximately fifteen minutes after having been stabbed in the left upper chest anteriorly. No blood pressure was obtainable on admission although a weakly perceptible peripheral pulse was noted and the heart sounds could be auscultated. Breath sounds were markedly decreased over the left chest and there was dullness to percussion in the same area. Films of the chest confirmed the presence of a large hemothorax on the left. A catheter was inserted into the left chest and attached to water-seal drainage and approximately 2300 cc. of blood recovered. Because of the swelling about the site of the stab wound (second intercostal space just outside the midclavicular line) and suggestive diminution of the left radial pulse, the possibility of laceration of the intrathoracic left subclavian artery was entertained, and the patient was immediately taken to the operating room having received 2000 cc. of whole blood. Following this blood replacement his blood pressure had risen to 140 mm. Hg. systolic.

Operation: The patient was anesthetized with cyclopropane, and upon insertion of an endotracheal tube, cardiac arrest occurred. Without sterile precautions the left chest was immediately opened through the third intercostal space, transecting the sternum, and with division of the left third and fourth costal cartilages. The heart was dilated and in asystole but spontaneous rhythm returned after "massaging" the heart three times. The left pleural space was noted to be filled with blood and there was active bleeding from a perforating wound of the left upper lobe. In addition blood was noted to squirt from a 1.5 cm. laceration in the pericardium with each contraction of the heart. While controlling the bleeding from the left upper lobe with pressure, the pericardium was widely incised and a laceration approximately 1 cm. in length in the outflow tract of the right ventricle was observed. A moderate hemopericardium was present. *The blood emitting*

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pulmonary valve was found. This was closed with five interrupted sutures of 000 silk. The incision in the ventricle was then closed with a continuous 000 silk suture permitting the air in the chamber to escape through the incision. A second suture was used to effect satisfactory hemostasis. The caval tapes were released allowing venous inflow to the heart to be resumed and the pump was gradually slowed as the cardiac action and peripheral pulse and pressure improved. The ventricle was open for a period of six and one half minutes and the perfusion lasted for sixteen minutes. The cavae catheters were removed and the auricular appendage ligated. The pericardium was loosely approximated and a tube was left in each pleural space for drainage.

An infusion of protamine sulphate was started by slow intravenous drip and discontinued after forty-five minutes when the clotting time was measured as five minutes. The catheter in the right femoral artery was removed and the artery was repaired with a continuous 00000 silk suture. The chest wall was closed in the usual fashion, utilizing interrupted wire sutures to approximate the sternum.

At the conclusion of the procedure the patient's general condition was satisfactory although he manifested a tachycardia in the range of 150. A tracheotomy was performed primarily as a precautionary measure and the patient was transferred to the recovery suite. A total of 2500 cc's blood loss occurred, chiefly from the right ventricle (coronary sinus).

Hospital Course: The patient recovered consciousness promptly. Except for a moderate tachycardia (130-150/min.) and slight tachypnea he manifested no outward effects of the procedure. The murmur in the precordial area could no longer be heard. Subsequently, the patient exhibited a moderate febrile response along with his tachycardia, and had some difficulty with bronchial secretions. However, the tracheotomy tube could be removed by the fourth postoperative day. On the eighth postoperative day approximately 60 cc. of fluid was aspirated from the right chest and a localized collection of seropurulent material evacuated from his wound. Subsequently his temperature fell to approximately normal levels and his tachycardia was less marked. Cultures of the wound and pleural fluid failed to grow any organisms. The patient's course was one of general improvement thereafter, and he was discharged from the hospital approximately twelve days later.

At the time of his discharge his vital signs had been normal for several days and he was completely asymptomatic. Cardiac catheterization was repeated on November 20, 1956 (Fig. 2). No evidence of a shunt, either left to right, or right to left could be demonstrated at this time. The pressure in the pulmonary artery remained somewhat higher than normal as did the pressure in the right ventricle. However, it is felt that this is a

POSTOPERATIVE CATHETERIZATION

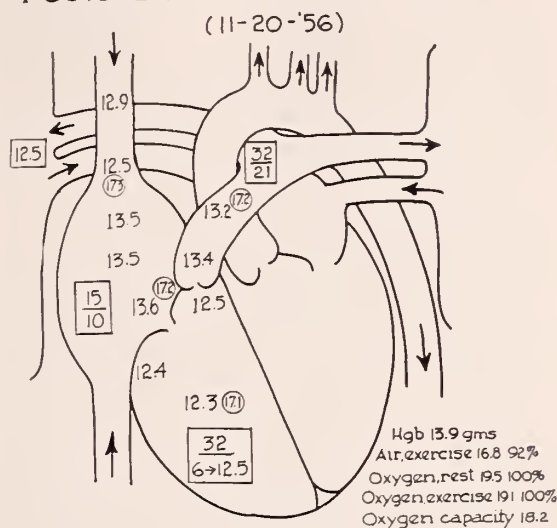


Figure 2

temporary elevation and will return to normal levels over a period of months.

DISCUSSION

To our knowledge there have been only two other patients in whom a diagnosis of traumatic ventricular septal defect was made clinically and in whom an attempt to close the defect was undertaken. Campbell⁵ reported a successful closure of a traumatic ventricular defect utilizing a heterologous lung oxygenator; whereas Cooley⁶ was unsuccessful in an attempt at closure by a modification of the Gordan-Murray technique. With respect to surgical closure of a ventricular septal defect secondary to myocardial infarction, we know of but a single instance in which such was attempted but the closure was apparently unsuccessful; the patient died in the early postoperative period.⁷ Examination of the heart at autopsy revealed that the Ivalon patch had become detached.

It is interesting to conjecture as to whether or not the defect in our patient might have closed spontaneously. At the time of operation, two months following the original injury, there was no evidence that the defect was healing. Its appearance was somewhat ovoid as opposed to the probable slit-like character at time of injury, suggesting secondary changes in the hemodynamics of the right ventricle

might be tending to favor perpetuation of the lesion, namely, the increased right ventricular pressure and/or dilatation of the right ventricle. Kay produced defects of the ventricular septum in dogs using a cork-borer technique. He found that defects measuring $\frac{3}{8}$ " in diameter healed spontaneously in two to five months in approximately 20 per cent of the long term survivors.⁸ Griffin and Essex⁹ found that all four animals with 8 mm. defects produced by a "punch" showed spontaneous healing within four months' time. Of 5 animals with 10 mm. defects, they found 3 healed at the end of one month, 1 healed at the end of two months, and described the last as nonfunctioning at the end of one month. Two animals in which defects 12 mm. in size were produced died within eight days.

The incidence of traumatic defects of the ventricular septum is quite low, and the mortality is undoubtedly increased when this factor is superimposed on a penetrating or perforating wound of the heart. Biggers¹⁰ reported 17 cases of heart wounds; none with involvement of the septum. Elkin¹¹ reported 23 cases with no septal wounds evidenced. Valle¹² reported 19 cases of foreign bodies retained within the heart, three of which were thought to lie within the septum and none of which was successfully removed. Maguire and Griswold¹³ reported 33 cases of penetrating wounds of the heart and pericardium, four of which had injuries to the ventricular septum. All four of these cases died. Maynard,¹⁴ in 1952, reviewed 81 cases of penetrating wounds of the heart and described no cases in which a diagnosis of septal perforation was made. In 1956, Maynard reported on 43 additional cases of heart wounds, and described one case in which an injury of the atrioventricular septum was found at autopsy. Priario¹⁵ reported a case of a gun shot wound of the heart in which the missile apparently traversed the interventricular septum without producing a communication between the ventricular cavities. It was necessary to ligate the pos-

terior descending coronary artery. No murmurs were detected postoperatively, and serial electrocardiograms were interpreted as normal.

Perforation of the infarcted interventricular septum occurs with far greater frequency than the traumatic injuries, there being over 70 cases in the literature in 1951,² and the diagnosis was made antemortem several times. However, the lack of myocardial reserve and the underlying disease of the coronary arteries make the over-all prognosis in this group much graver than in the traumatic group. Nevertheless, the extremely poor prognosis with this type of lesion warrants continued efforts to salvage some of the patients.

SUMMARY

A case is reported in which a 21 year old colored male sustained a penetrating wound of the heart, as well as of the interventricular septum. The perforation of the septum was manifested in the early postoperative period by a characteristic murmur and thrill and was confirmed by cardiac catheterization. Approximately eight weeks following the original injury successful closure of the defect was achieved. Subsequent cardiac catheterization no longer demonstrated a shunt existing between the ventricles. Acquired defects of the ventricular septum are briefly discussed.

REFERENCES

1. Abbott, M. E.: *Atlas of Congenital Cardiac Disease*, American Heart Association, 1936.
2. Kaplan, B. M., Mahaffey, J. H., and Clay, H. L.: Perforation of the interventricular septum following myocardial infarction, *J. Kentucky State M. Assn.*, 49:161, 1951.
3. Bender, F. and Hegemann, F.: Klinische Beobachtungen bei einer traumatischen Ventrikelseptumruptur, *Zeitschrift für Kreislaufforschung*, 45:352, 1956.
4. DeWall, R. A., and others: A simple expendable artificial oxygenator for open heart surgery, *Surg. Clin. North America* 36:1025, 1956.
5. Campbell, G. S., Crisp, N. W., and Brown, E. B.: Total cardiac by-pass in humans utilizing a pump and heterologous lung oxygenator (dog lungs), *Surgery* 40:364, 1956.
6. Cooley, D. A.: Personal Communication.
7. Cooley, D. A.: Discussion of Warden, DeWall, Cohen, Varco, and Lillibei: A surgical-pathologic classification for isolated ventricular septal defects and for those in Fallot's tetralogy on observations made on 120 patients during repair under direct vision, *Thoracic Surg.*, 33:21, 1957.
8. Kay, J. H., Thomas, V., and Blalock, A.: The experimental production of high interventricular septal de-

fects, Surg., Gynec. & Obstet. 96:529, 1953.

9. Griffin, G. D., and Essex, H. E.: Experimental production of interventricular septal defects, Surg., Gynec. & Obstet. 92:325, 1951.

10. Bigger, I. A.: Heart wounds, J. Thoracic Surg. 8:239, 1939.

11. Elkin, D. C.: Wounds of the heart, Ann. Surg., 120:817, 1944.

12. Valle, A. R.: War injuries of the heart and mediastinum, Arch. Surg. 70:398, 1955.

13. Maguire, C. H. and Griswold, R. A.: Further observations on penetrating wounds of the heart and pericardium, Amer. J. Surg. 47:721, 1957.

14. Maynard, A., Cordice, J. W., and Naclerio, E. A.: Penetrating wounds of the heart, Surg., Gynec. & Obstetrics 94:605, 1952.

15. Maynard, A., Avicella, M. J. and Naclerio, E. A.: The management of wounds of the heart. A recent series of 43 cases with comment on pericardicentesis in hemo-pericardium, Ann. Surg. 144:1018, 1956.

16. Priario, J. C., Fiandra, O., and Cuculic, C.: Herida de bala del Corozon, El Torax 3:207, 1954.

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SURGICAL TREATMENT IN CEREBRAL PALSY *

DANIEL M. KINGSLEY, M.D.

ALEXANDRIA

Surgical treatment of cerebral palsy is not a cure-all. Indeed, surgery plays a relatively minor role in the over-all plan of rehabilitation of this condition. Nevertheless, in that small group of patients amenable to surgical help, operative procedures are important.

In the upper extremities, surgery may make the difference between ability or inability to dress, feed, and obtain employment. In the lower extremities, surgery may enable a patient who has never walked and who has been confined to a wheel chair, to get up and ambulate under his own power.

Certain surgical procedures, such as arthrodeses of the wrist or feet, heel cord lengthenings, adductor tenotomies, and neurectomies at various levels have been standard practice for many years. However, authorities in this field have discouraged any wide-spread endeavors to extend the indications to other procedures. Only in the past four or five years has there been a generalized renaissance of orthopedic surgical procedures in cerebral palsy. Newcomers to this field have cau-

tiously proceeded to extend the operative indications. The successful results have advanced the number of indications for surgery to a marked extent. Even athetoids, in whom surgery has supposedly been contraindicated, have repeatedly been greatly benefited.

Personal experiences at the State School for Spastic Children over the past eight years has afforded an opportunity to perform a variety of procedures sufficient to lead to some tentative conclusions. Certain of these will be presented in this discussion.

UPPER EXTREMITIES

In the upper extremity, only a few patients have been operated upon. One procedure which promises to be useful, is correction of pronation contractures of the forearm. This type of contracture is frequently seen in hemiplegics. At surgery the pronator teres is found to be tightly contracted. It jumps like a steel spring when released. Such release is not sufficient in itself. A motor must be placed in position for supination of the forearm. Two steps have proven helpful. The more important one is transfer of a useful, functioning muscle, usually the flexor carpi ulnaris, to the dorsal and radial aspect of the distal portion of the radius. In addition, the pronator teres is attached to a cuff of periosteum carried around from the anterior surface of the radius to the radial side of the radius, and then dorsally, to project as a tongue on the dorso-ulnar aspect of the radius. The pronator teres is thus salvaged for use as a motor for supination.

LOWER EXTREMITIES

In the lower extremities, in addition to the operations already mentioned, several procedures have repeatedly proven useful. It is necessary to start rehabilitation at the hips and proceed distally, to the knees and ankles. This plan is necessitated by the postural reflexes set in motion by hip deformities, such as flexion contractures. These produce knee and ankle flexion and consequent gait disturbances. Any deviations from this plan lead to complications.

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In two limbs, correction of flexion contractures of the hips and knees was done first at the knees, as advocated by Eggers. The knees were successfully straightened, but the hips were not improved. It was impossible to use braces past the thighs for standing or walking in these two limbs. These results discouraged any changes in the overall plan.

Similarly, correction of hip contractures alone proves contraindicated when knee flexion contractures are also present. The latter must be corrected before braces can be applied to hold correction of the hips.

Hip and knee flexion contractures frequently are found associated. The hips are corrected surgically, after physical therapy has gone as far as possible and proved insufficient. Smith-Petersen incisions are usually utilized to locate tight structures, such as tendons, ligaments, and hip joint capsule. A Luck incision was used twice, with good results. A double hip spica cast is used for six to eight weeks depending on the clinical degree of spasticity. At three weeks the patients have usually recovered enough to allow correction of knee contractures when the latter are indicated also. The double hip, long leg spica cast is then re-applied. When the knees alone are operated upon, a long leg cast suffices, with the knees held in complete extension for six to eight weeks.

Long leg braces with pelvic bands and hip and knee extension locks, are then used for prolonged periods, together with physical and occupational therapy. At night, plaster beds are frequently utilized to afford rest to pressure points resulting from the braces. Gravity positioning on stretchers during school hours, has proven useful.

KNEE FLEXION DEFORMITY

In the knees a flexed position may be due to one of three causes: (1) quadriceps weakness; (2) flexion contracture of the hamstrings; (3) the result of balancing reflexes to accommodate to a hip flexion contracture. Flexion contractures due to the hamstrings are the most com-

mon type. At first, correction by Eggers procedures was done. For the past two years, however, equally satisfactory results have followed adequate detachment of all hamstrings without any special attempts to cut the retinacula or to re-implant the cut tendons into the femur.

One theoretical danger attached to this release of all the hamstrings, is resulting overaction of the quadriceps. This effect has not occurred. However, occasionally a patient who has not been subjected to any surgery whatsoever, is seen with patellae pulled far cephalad. The mechanism for producing this result is unknown, but obviously the patellar tendons must have yielded to a continual stretch during the growth period. In these patients, quadriceps weakness is present and adds to the confusion, since a strong quadriceps might otherwise be considered as the cause of the patellar displacement.

EQUINUS GAIT

Hip flexion contractures are especially pernicious in causing subsequent knee flexion and then one of the three types of equinus gait found in cerebral palsy follows. The key to this commonly observed condition is the angle between the leg and foot, at the ankle. This is actually in a calcaneus position in such patients. Yet this type of patient cannot walk, except on his toes, with the heels failing to touch the floor. When these patients are braced solidly, with equinus stops added, they lose their previous ability to walk. In such patients, the braces are frequently therefore made still stronger. It is then noted that the shoes become deformed. The heels do not contact the bottom of the shoes and ambulation is still impossible. Pressure sores often result from these braces, before they are discarded as useless. In these patients, the equinus gait is automatically corrected when the hips and knees are extended by surgical methods already described. Tragic results follow lengthening of the heel cords in an attempt to correct this equinus gait. The calcaneus already present, but concealed, is thereby increased to such an extent that

walking becomes totally impossible.

Another, similar, type of equinus gait is due to quadriceps weakness. Bracing relieves this abnormality of gait. Sometimes the weakness is so slight that the time-tested method of strengthening the quadriceps muscle by a heel raise alone, is sufficient for correction.

There is a reciprocal interdependence between the knee-flexion position and the calcaneus of the feet. Both are related as a response to gravity, through the semi-circular canals. When the knees are held flexed, it is extremely difficult to ambulate except with the foot in calcaneus. Yet the heels must be elevated to give a push-off. The weight is then borne on the toes and forefeet alone. When this combination is seen, of calcaneus at the ankle, yet of weight being borne on the forefoot with the heel held off the floor, the conclusion is inescapable that there must be knee flexion causing the observed gait. Further analysis as to the presence of a knee or hip flexion contracture, or of quadriceps weakness alone, then leads to proper treatment by physical therapy, bracing, and surgery.

A second type of equinus gait in cerebral palsy is a result of a truly shortened heel cord. This is easily determined by tests in common use. This type is about as frequently encountered as the previous one. Associated with this second type of equinus is a deformity of gait, with eversion of the heels, but the heels contact the floor. This causes various extremes of flatfoot, all characterized by heel eversion, sag of the arches, and rapid deformation of the shoes. The cause of this equinus is frequently concealed when the heels bear weight in eversion. Advanced degrees of equinus without eversion of the heels and flatfoot, and with weight borne only on the forefoot, have not been encountered.

This type of equinus gait must be differentiated from one which is identical except for etiology, since there is no equinus actually present in the patients under discussion. Instead, there is over-

action of the peroneal muscles. Eversion of the heels, sag of the arches, and foot deformity are similar to the concealed equinus gait just described. In both, the heels bear weight.

Treatment is dependent on proper analysis. In the hidden type of equinus, heel cord lengthening corrects the deformity. In types which do not require much lengthening, the gastrocnemius can be loosened at its popliteal origin and slid distally by a recession type of operation. In patients who need more length, a Hibbs type of heel cord lengthening is done, sometimes combined with posterior capsulotomy of the ankle joint.

On the other hand, the flatfoot due to peroneal over-action is corrected by the transfer of the peroneus longus to the position of the anterior tibial muscle.

The third, and last, type of equinus is seen less commonly than the other two types. It is the result of over-action by the posterior tibial muscles. So far, physical therapy has been sufficient for correction, without resort to surgery.

PRACTICAL VALUE OF MEASURES

The application of the principles enunciated here has been of increasingly greater practical value as time goes on. It is encouraging to be able to examine the static and dynamic posture, then do a muscle check, and from these findings, outline a program of physical therapy, bracing, and surgery that leads to self-sufficiency. The considerations mentioned here are rewarding especially from the standpoint of proper bracing. Braces for these patients are among the most expensive devised. It is therefore gratifying to be able to prescribe at the outset, braces that help, instead of hinder rehabilitation. The proper analysis of physical therapy to be used is another saving of energy and leads to continued enthusiasm on the part of both patients and personnel. Finally, tragic sequelae of technically good, but improperly indicated, operations are avoided.

In this series of patients, neurectomies have not been performed. It has always

seemed more logical to utilize the muscle pulls by transferring them rather than to weaken them irretrievably by sectioning their nerve supply. Perhaps the final proof of this opinion is the fact that patients with extensive neurectomies still have the deformities described in this paper. The procedures advocated here had to be performed before these patients could be rehabilitated.

Secondary rewards of more rapid mental progress and improved family and social relationships, frequently overshadow the primary surgical benefits. Improvement to an extent allowing employment in industry occasionally results, but is not to be expected. Nevertheless, decrease in physical and financial burdens on the part of families or institutions is rewarding.

CONCLUSIONS

After all other modalities of treatment have been tried to rehabilitate patients with cerebral palsy, surgery is found to salvage a relatively small percentage, in whom other methods have failed.

Surgery is indicated especially in fixed deformities that do not yield to physical therapy. Such deformities are frequently found. Most of the standard methods of correction are omitted because they are so well known. The procedures which are less often used, but which have stood the test of time in producing rewarding results, are described.

In the upper extremity, muscle releases and transfers are done for pronation contractures of the forearm.

In the lower extremity, rehabilitation starts at the hip and proceeds distally. The inter-relationship of hip and knee flexion contractures with posture of the ankles and feet, is stressed and analyzed.

Three types of knee flexion deformity are discussed.

Three types of equinus deformity of the feet are analyzed.

Two types of flatfoot are described.

Treatment is outlined for each type.

Stimulation of the mind after surgical rehabilitation often leads to startling mental progress, with improved family and

social relationships. Nevertheless, improvement to a degree compatible with self-sufficiency outside of a sheltered environment, is rarely attained.

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CORONARY ATHEROSCLEROSIS *

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Coronary artery disease is too broad a subject to attempt to cover in one hour and I have decided to limit this discussion to atherosclerotic disease of the coronary arteries. I have done no research on the etiology of this disease and plan none in the immediate future. Having thus qualified myself, most of my remarks may be regarded as in the light of an unbiased opinion.

FACTORS IN INCREASED INCIDENCE

There can be little doubt that an actual increase in the incidence of atherosclerotic coronary disease has gradually developed during the past thirty years. Several factors appear to have contributed to this increase. In this same period, longevity has increased by about ten years. Thus, larger segments of a larger population have entered the age period in which atherosclerosis in general, and of the coronary arteries in particular, is known to be more common. There has developed a considerable increase in our general knowledge of coronary disease in this same time period and the extensive use of the direct writing electrocardiograph, particularly since the second World War, are factors which greatly contribute to much more accurate diagnosis in this area. Pathologists are not unlike clinicians in that they can also find "what they look for." Moreover, the greater segment of the population in the advanced age period over sixty years has required considerable therapy in the field of major surgical procedure for disease or trauma unrelated to

* Transcription of a discussion given at the Shreveport meeting of the Louisiana State Heart Association, May 15, 1957.

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the cardiovascular system, and the associated incidence of shock has served to precipitate myocardial infarction in many a patient who might have otherwise avoided the clinical level of coronary artery disease. Finally, I am informed on good authority¹ that the fat content of the American diet has probably doubled in the past thirty years and there is reason to believe this may be a contributing factor to the increased incidence of coronary atherosclerosis.

ALTERED BLOOD LIPID PICTURE

For the past seven years, there has developed a growing conviction amongst cardiologists that clinical atherosclerosis is not a necessary consequence of age. A view of this kind is certainly important for both the researchers and practicing physicians who together look for cause with a view to prevention or specific treatment. There has now accumulated considerable data which indicates that atherosclerosis may be associated with an altered blood lipid picture. A brief review follows. In 1953, Barr² pointed out that, among all the mammals, only man was subject to atherosclerosis and only in man was one confronted with relative high values of certain factors of the blood lipid picture. These factors are the total serum cholesterol, the cholesterol esters, the cholesterol-phospholipid ratio, increased concentration of the B₁ lipoprotein aggregates, and increased concentrations of the lipoprotein macro-molecules of the S_f 12-20 and 35-100 class.*

In 1950, Gofman³ pointed out that only infants were immune to atherosclerosis; that children and young adults and women in the childbearing age period were relatively immune and that in the immune and the relative immune groups there are relatively low concentrations of the "specific" classes of lipoproteins. On the contrary, he found increasing concentrations of these aggregates in man through the sixth decade, particularly in subjects hav-

ing spontaneous atherosclerosis. In 1953, Barr² showed that estrogens could reverse the altered blood lipid picture and two years later Russ⁴ demonstrated that androgens produced an opposite effect. Also, in 1953, Wuest, Dry and Edwards⁵ showed that there was an increased incidence of atherosclerosis in women following surgical menopause.

There are a number of diseases which tend to show the altered blood lipid pattern in one form or another and which are known to be associated with severe atherosclerosis. These diseases are diabetes mellitus, familial cholesterolemia or familial hyperlipemia, myxedema, nephrosis and xanthomatoses.

On the experimental side of the picture, a considerable number of investigators have been able to produce experimental atherosclerosis in a variety of animals. This has uniformly been done by feeding high cholesterol diets often, in addition to other specialized procedures. In the omnivorous animals, the distribution of experimental atherosclerosis is the same as it is in man. Only recently, however, experimental atherosclerosis has been followed by actual myocardial infarction.⁶ In 1910, Windaus,⁷ and again in 1933, Cowdry⁸ demonstrated that most of the deposition of the early atherosclerotic lesion was composed of cholesterol.

HIGH FAT DIET

On the dietary side of the picture, evidence continues to accumulate. In 1946, Steiner⁹ pointed out that there was a low incidence of diseases attributable to atherosclerosis in vegetarian groups, particularly those on a low fat diet. In 1947, Wilens¹⁰ showed that severe atherosclerosis was ten times more common in the obese than in subjects of normal weight at comparable age periods, and was twice as common in hypertensive as in normotensive subjects. In 1952, Keys¹¹ emphasized the importance of the total fat content of the diet rather than that of the cholesterol per se. He was much impressed by the low incidence of atherosclerosis in the Bantu of South Africa

* These figures are flotation rates in centimeters per second per unit field of force in the ultracentrifuge.

who subsist on a diet in which only about 10 percent of the total calories is contributed to by dietary fat.¹² In 1952, Gofman and Jones¹³ showed that there was an increased concentration of lipoproteins of S 35-100 class in obese subjects as compared with that in lean subjects. Gofman, et al^{14, 15} also showed that prolonged low fat diet gradually reduces the concentration of abnormal lipoproteins.

During World War II it was not possible to obtain a rich diet high in fat and during this period there was a sharp decline in diseases attributable to atherosclerosis.¹⁶ In comparison with other regions of the world there is a high incidence of diseases due to atherosclerosis in the dairy farming countries, the United States, Great Britain and Denmark.¹⁷

In 1951, Wilens¹⁸ showed that under given filtration pressures almost all of the inorganic constituents of serum could be made to filter into the arterial walls from the lumen outward. Cholesterol was present in the filtrate in low concentration and limited to the subintimal region of the arterial wall, stopped as it were, by the internal elastic lamina. Undoubtedly, observations of this kind led Page¹⁹ (1954) to elaborate his filtration theory of atherogenesis. The implication is that normal subjects gradually deposit a limited amount of cholesterol in the subintimal region, but when there occurs an increased concentration of those lipid particles best adapted to penetrating the arterial intima, the rate and quantity of deposition is greatly increased, particularly if the filtration pressure (blood pressure) is high or if the intima has increased its permeability due to a change in its ground substance. In 1952, Moon and Rinehart²⁰ showed that most atherosclerotic lesions were preceded by a local alteration in the ground substance of the intima which is followed by a fibroblastic hyperplasia. In 1953, Kats and Stamler²¹ felt that the thyroid hormones and potassium iodide offered some protection to experimental atherosclerosis, possibly because of a decreased permeability of the vascular in-

tima which is attributed to the action of these drugs.

PREVENTIVE MEASURES

It should be remembered that the clinical evidence is largely statistical with great overlapping on either side of the argument. Nevertheless, it is natural that evidence of the kind indicated should be followed by suggestions regarding the possible prevention or specific treatment of atherosclerosis at the clinical level. These suggestions are: use of one or more of the following measures, the low calorie diet, the low fat and/or cholesterol diet, the lipotropic agents, the plant sterols, heparin and heparin-like substances, estrogen, and finally thyroid hormones and potassium iodide.

Certainly, the low calorie diet is indicated for the treatment of obesity whether or not there is clinical evidence of atherosclerosis. The life insurance companies have been long aware of the danger of obesity. There is, I believe, a twenty-year less life expectancy for those who enter the forty-year period fifty pounds or more over ideal weight. It appears advisable to slowly reduce obese subjects with coronary atherosclerosis by low calorie diet. To reduce them rapidly is to put them on a high-fat diet, their own body fat. Some cardiologists¹⁷ have been impressed with the occurrence of acute myocardial infarction in subjects who have recently lost considerable weight in a short period of time.

The low-fat diet appears to be a reasonable therapeutic procedure in treatment of coronary atherosclerosis. For this purpose it is suggested that no more than 20 to 25 per cent of the total calories be contributed to by dietary fat. At the present time it is not known whether the fat content should be animal fat or vegetable fat, or both.

The lipotropic agents choline, methionine and inositol are extensively used. These substances have been known to be useful in the treatment of fatty liver due to certain deficiency states. It was hoped their use might reduce the cholesterol-phospholipid ratio. Clinical evidence is in-

sufficient and contradictory and in general the lipotropic agents are not recommended for therapy in coronary atherosclerosis. As a matter of fact, choline is now on the atherogenic list.⁶

Plant sterols as yet have not proved to be of definite value. Consequently, beta sitosterol, dihydrocholesterol, cholesteryl chloride, other cholesterol analogues and special vegetable fats are not recommended as specific therapy. Moreover, the clinical evidence is equally weak for the use of heparin or heparin-like substances. The experimental evidence is confined, I believe, to work with the rabbit.

Estrogens in experimental and clinical use for atherosclerosis have been uniformly confined to the synthetic preparations rather than the natural hormone.²² Their use in man produces irritability, depression, femininity, and impotency and there is as yet no evidence that the course of coronary atherosclerosis in man can be altered. These substances are consequently not recommended.

Clinical evidence to support the use of the thyroid hormones and/or potassium iodide is totally lacking and these drugs are therefore not recommended for specific therapy in coronary atherosclerosis. The present phase of our discussion terminates with the argument that, as yet, there is no *specific* therapy for coronary atherosclerosis.

CLINICAL PHASES

Let us turn our attention now to the clinical phases of the problem. If we examine a sufficiently large number of human hearts, all of which show severe atherosclerotic occlusive changes in the larger segments of the coronary arterial tree, there will be a minority of examples in which the myocardium is generally good and reference to the clinical picture shows no symptoms associated with heart disease. The existence of such a minority group illustrates the great importance of the *rate* at which the occlusive changes take place rather than the extent to which they may have developed in a given subject. If the rate of occlusive change is

slow enough, coronary collaterals may keep pace and take adequate care of the myocardium. If we examine a sufficiently large number of hearts from patients who suffered a painful heart death, there will be a minority in which the areas of coagulation necrosis or fibrosis are not supported by evidence of severe occlusive change and, in occasional instances, the evidence of atherosclerosis in the coronary arteries is minimal. This minority group illustrates the great importance of coronary artery spasm or perverted vasomotor activity of the coronary arterial tree when diseased in one or more of its subdivisions. This brings us to the two current theories for the cause of heart pain. Wood²³ states that Parry first enunciated the idea that relative myocardial ischemia forms the basis of heart pain. It appears likely that if Parry had known that the terminal end plates of the sensory nerve fibers of the heart were confined to the adventitia of the coronary arteries and to the subepicardial surface, he would have never offered this suggestion. This theory was later energetically supported by Sir Thomas Lewis who found it necessary to invoke the idea of a P (pain) substance supposedly elaborated by the ischemic myocardium. The second theory ascribes heart pain directly to perverted vasomotor activity of the coronary arterial tree. I have long been interested in the transient changes in the final ventricular deflections of the electrocardiogram as an evidence of myocardial ischemia. In proper electrocardiographic studies which are correctly interpreted, we have a sensitive and reliable detector of evidences of myocardial ischemia.

I wish to emphatically emphasize that there is a striking dissociation between the electrocardiographic evidence of myocardial ischemia on the one hand and the occurrence of pain clinically on the other. Electrocardiographic evidence of ischemia occurs in somewhat more than half of attacks of angina pectoris. On the other hand, we now know that painless myocardial infarction is not uncommon and there

can be no more severe myocardial ischemia than that which results in infarction-necrosis of great regions of the ventricular wall. Coronary arteries which carry little or no blood may be subject to profound vasomotor change and severe heart pain with little or no electrocardiographic evidence of myocardial ischemia. I will not take time now to labor these arguments further. The trigger mechanisms for the vasomotor attacks of angina pectoris are very important in the diagnosis.

CLINICAL PICTURES

The clinical pictures associated with coronary atherosclerosis are six in number, three are painless and three are painful.

The most common painless form consists of the gradual or abrupt onset of congestive heart failure associated with a rapid arrhythmia which is atrial fibrillation in the vast majority of instances. Here, the rapid ventricular rate fatigues the myocardium and is the direct cause of the congestive failure. The outlook is usually good because the high ventricular rate can be controlled with digitalization. Subsequent to recovery from congestive failure, particular cases may present the problem of converting the arrhythmia to normal sinus rhythm.

The second painless picture likewise unfolds with the appearance of congestive heart failure but is unassociated with a rapid arrhythmia. Under these circumstances, a poorly irrigated myocardium forms the basis of the failure and consequently the outlook is serious and a sharply limited workload (obtained by rest) is invariably required. These subjects are usually over sixty years of age unless hypertension is a component part of the picture. This age period by no means excludes other factors such as "apathetic" hyperthyroidism, or hypothyroidism, and careful consideration should be given to other less common etiological factors.

The third painless picture appears with the onset of syncope in association with Stokes-Adams attacks. The attacks are

less frequently due to recurring complete heart block and are more commonly produced by an inadequate ventricular pacemaker following the development of complete heart block. When the inadequate pacemaker is in the form of ventricular tachycardia, quinidine and procaine amide are contraindicated because of the likelihood of ventricular standstill with termination of the attack. Isopropyl norepinephrine has been reported as useful.²⁴

ACUTE MYOCARDIAL INFARCTION

Let us next consider some of the problems associated with acute myocardial infarction. One of the difficult ones in this area is prognosis. The family history of heart attacks has been emphasized as unfavorably influencing the long-term outlook. The mortality rate in acute myocardial infarction is about 25 per cent. Of subjects who die in the first attack, 80 per cent die in the first twenty-four hours, 60 per cent in the first two hours and one-half in the first fifteen minutes. In man, the mortality rate increases with age. Thus, in men aged 44 years or under, the mortality rate is low or in the neighborhood of 3 to 5 per cent. By contrast, the rate at 65 years or over is about 35 per cent. In women, the mortality rate is 25 per cent at any age. There are, in addition, a number of complications which profoundly increase the mortality rate. The development of complete heart block is associated with a mortality rate upwards of 90 per cent. The occurrence of acute heart shock carries a mortality rate of 80 per cent; the development of paroxysmal tachycardia of any type, including flutter, carries a mortality rate of 70 per cent; that of congestive failure a mortality rate of 60 per cent; and that of pneumonia a mortality rate of 50 per cent. Wood²⁵ points out that there are an additional number of findings which tend to be associated with an increased mortality rate. These are a pulse pressure of less than 20 mm. of Hg., a systolic pressure of 90 mm. of Hg., or less, the occurrence of either left or right bundle-branch block, a definite increase of heart

size, the occurrence of intractable heart pain, and finally, the occurrence of acute myocardial infarction in the diabetic.

On the other hand, there are factors which appear to have no effect on the mortality rate. These are the previous presence of angina pectoris; the previous existence of hypertension; absence of heart pain, atrial or ventricular ectopic beats; the location of the infarct and finally, the development of fibrinous pericarditis.²³

I would like to emphasize certain features in the management of acute myocardial infarction. It is important that the patient receive early skilled medical and nursing care. Vasopressor drugs are required for treatment of acute heart shock. Here, 10 mg. of L-norepinephrine may be added to a liter of 5 per cent glucose and given intravenously through a polyethylene tube at a rate which maintains the blood pressure at 110-120 mm. Hg. in previously normotensive subjects or at higher levels in previously hypertensive subjects. The intravenous or the intramuscular use of heparin in the early days is probably useful even though more prolonged anticoagulant therapy is un contemplated. An 800 calorie diet with 0.5 gm. of sodium per day is desirable, at least through the first week. It is important to detect the first signs of congestive failure and to treat this complication vigorously. Likewise, the early detection and antibiotic treatment of pneumonia are imperative. The serious arrhythmias must be treated intelligently and without hesitation using sufficient doses of the appropriate drugs. The diabetic with acute myocardial infarction must be managed with a view to avoiding even short periods of hypoglycemia. Antiproteolytic drugs are recommended either in every case or in cases having one or more of the serious complications cited earlier. Generally, when a program of this kind is well carried out, the mortality rate can be reduced by 50 per cent or more.

ANGINA PECTORIS

Angina pectoris frequently commences

abruptly but in a given subject usually takes on a stable pattern for a variable period of time extending from a few weeks to several years. The associated heart pain is continuous and of growing intensity. The distribution is midsternal, pectoral, or cervical. It may involve either shoulder and radiate down either the lateral or the medial aspect of one or both arms. At times it may involve the lower jaw. It may be strictly confined to one of the sites of usual radiation or the radiation may be centripetal. The duration is brief, being a matter of several minutes, and is rarely as long as fifteen or twenty minutes. The pain is most commonly triggered by exertion or on emotional upset. Exertion after meals or with exposure to cold are very apt to trigger the attack at a lower level of activity. The chest is symptom-free between attacks and the left submammary region is not involved. Nitroglycerine affords prompt relief; the drug action commencing within thirty seconds. It is important to use the nitroglycerine to prevent, as well as, to stop an attack. The patient should understand that nitroglycerine is not a narcotic, is not habit forming and can be used freely for long periods of time, if necessary.

IMPENDING INFARCTION

There is a clinical picture lying between that of angina pectoris and acute myocardial infarction which is probably based on an accelerated phase of coronary atherosclerosis. The previous pattern of the anginal attacks has changed. The attacks may be more frequent or they may last longer. More characteristically, they begin to occur at rest or may occur at night and thus awaken the subject from sleep. The nitroglycerine requirement is increased and may actually fail to give complete relief. I prefer to call this picture one of *impending* infarction. In this group of subjects we have routinely encountered electrocardiographic evidence of local ventricular ischemia. The location of the ischemia almost always predicts the location of subsequent myocardial in-

farction in those instances when subsequent infarction cannot be avoided. At the present time, I believe it is best to admit these patients to the hospital for a period of two or three weeks whenever feasible. During hospitalization, dicumarol is started and the dose determined which will elevate the patient's prothrombin time to 2.5 or 3 times that of the control. The vasodilator action is usually associated with relief of the increasingly troublesome attacks. The subject is ordinarily back at the previous work level within six weeks after commencing hospitalization. Anticoagulant therapy is continued for at least six and preferably twelve months. In a disease as phasically slow in acceleration or in coronary collateral adjustment as atherosclerosis, it appears unlikely that more than transient benefit might come from shorter periods of antiprothrombin medication. Aside from this argument, there are indications that acute myocardial infarction may be avoided in an appreciable number of instances. Moreover, in the instances when infarction occurs, there is growing evidence that the course is likely to be less complicated and the mortality rate thereby lowered.

I have by no means completely covered the subject but would like to leave the few remaining minutes for questions which I will attempt to answer.

Dr. George Anderson, (Lake Charles, La.): Dr. Bayley, do you think that nitroglycerine is dangerous in lowering blood pressure when the attack of pain turns out to be acute myocardial infarction?

Dr. Bayley: No! I think this point has been greatly exaggerated.

Dr. Anderson: Dr. Bayley, if a patient in an attack of heart pain shows a rather striking increase in blood pressure, would you recommend the use of drugs to lower the blood pressure?

Dr. Bayley: No, I would not use an antihypertensive drug under these circumstances but would use a strong sedative and/or a narcotic if necessary to relieve the pain. In the event that the attack

heralds the onset of infarction, the antihypertensive drug might aggravate or help initiate the complication of heart shock. I would like to hear what Dr. Edgar Hull's opinion is in this matter.

Dr. Edgar Hull: I agree with Dr. Bayley.

REFERENCES

1. Hellbaum, Arthur A.: Personal Communication. 1957.
2. Barr, D. P.: Some clinical factors in the pathogenesis of atherosclerosis, *Circulation* 8:641, 1953.
3. Gofman, J. W., and others: Blood lipids and human atherosclerosis, *Circulation* 2:161, 1950.
4. Russ, E. M., Eden, H. A., and Barr, D. P.: Gonadal hormones on protein-lipid relationships in human plasma, *Amer. J. Med.* 19:4, 1955.
5. Wuest, J. H., Dry, T. J. and Edwards, J. E.: The degree of coronary atherosclerosis in bilaterally oophorectomized women, *Circulation* 7:801, 1953.
6. Hartroft, W. S. and Thomas, C. A.: Symposium on atherosclerosis at L.S.U. Sponsored by the A.M.A., March 15, 1957.
7. Windaus, A.: Über den Gehalt Normaler und Atheromatöser Aorten an Cholesterin und Cholesterinestern, *Ztschr. f. Physiol. Chem.* 67:174, 1910.
8. Cowdry, E. V.: Atherosclerosis, A Survey of the Problem. New York, Josiah Macy, Jr. Foundation, Macmillan Co. 1933.
9. Steiner, A., and Kendall, F. E.: Atherosclerosis and arteriosclerosis in dogs following ingestion of cholesterol and thiouracil, *Arch. Path.* 42:433, 1946.
10. Wilens, S. L.: Bearing of general nutritional state on atherosclerosis, *Arch. Int. Med.* 79:129, 1947.
11. Keys, A.: Human atherosclerosis and diet, *Circulation* 5:115, 1952.
12. Keys, A.: Atherosclerosis: A Symposium Presented by the Minnesota Heart Association and the University of Minnesota, Sept., 1955.
13. Gofman, J. W. and Jones, H. B.: Obesity, fat metabolism and cardiovascular disease, *Circulation* 5:514, 1952.
14. Gofman, J. W., and others: Lipoproteins and atherosclerosis, *J. Gerontol.* 6:105, 1951.
15. Gofman, J. W., and others: Blood lipids and human atherosclerosis, *Circulation* 5:119, 1952.
16. Malmros, H.: Relation of nutrition to health; Statistical study of effect of war-time on atherosclerosis, cardiosclerosis, tuberculosis, and diabetes, *Acta. Md. Scand. Suppl.* 246:137, 1950.
17. Friedberg, C. K.: Diseases of the Heart, Second Edition, p. 437. W. B. Saunders Co., Philadelphia, 1956.
18. Wilens, S. L.: Experimental production of lipid deposition in excised arteries, *Science* 114:389, 1951.
19. Page, I. H.: Atherosclerosis. An introduction, *Circulation* 10:1, 1954.
20. Moon, H. D., and Rinehart, J. F.: Histogenesis of coronary atherosclerosis, *Circulation* 6:481, 1952.
21. Kats, L. N. and Stamler, J.: Experimental Atherosclerosis. C. C. Thomas, Springfield, Ill., 1953.
22. Barr, D. P.: Hormonal Factors in the Pathogenesis of Atherosclerosis. Atherosclerosis, A Symposium Presented by the Minnesota Heart Association and the University of Minnesota, Sept., 1955.
23. Wood, P.: Diseases of the Heart and Circulation. Second Edition, p. 701. J. B. Lippincott Co., Philadelphia, 1956.
24. Schumacher, E. E. and Schmoek, C. L.: The control of certain cardiac arrhythmias with isopropyl-norepinephrine, *Am. Heart J.* 48:933, 1954.

REMARKS ON THE REHABILITATION
OF THE CARDIAC PATIENT *MANUEL GARDBERG, M. D. †
NEW ORLEANS

Discussion of the rehabilitation of the patient with disease of the heart must be divided under two categories:

1. Physical rehabilitation including all measures designed to preserve *cardiac* efficiency so that the patient may again become in some degree a physically functioning unit in society.

2. Psychologic rehabilitation including all measures designed to preserve *personality* efficiency without which the patient cannot again become a functioning unit in society.

I shall confine my remarks to the second. There is no doubt in my mind that more persons with cardiac lesions are invalidated and, yes, ultimately destroyed by psychologic forces than by diminution of cardiac efficiency.

Because we shall not have the time to discuss this problem in relation to each kind of heart disease separately and because most aspects of the problem are common to all, I shall choose as a vehicle for my remarks, the cardiac patient who represents both the most common problem in my experience and the most difficult of management. This is the patient who has had a coronary thrombosis.

FEAR

The most powerful force arrayed against us in this situation is *fear*, and it is necessary to speak not only of the patient's fear but of the *family's* fear and last but not at all least of the *physician's* fear.

The patient's fear raises two intolerable spectres: one the threat of imminent sud-

den death, the other the threat of invalidism, and the first contributes to the second, for in his fear of the grim reaper he is apt to keep himself immobile (under the delusion that even the slightest activity invites immediate dissolution). In this dilemma the members of the family are frequently of no help. Displaying anxiety, giving the patient frequent warnings when he shows any inclination to activity they shatter the weak foundations upon which early in his career as a "cardiac" the patient is attempting to erect the confidence that he needs. The physician, succumbing to the same fears for the patient's continued existence frequently tends to emulate the family's behavior and one cannot help but feel that an important factor here is his fear of the great responsibility involved if one is to attempt to overcome the oversolicitousness of the family; to encourage activity when the family is fearful of it. After all if the patient dies, he fears criticism will appear to be justified.

IMMEDIATE MEASURES

The rehabilitation of the patient who sustains a coronary thrombosis begins with the inception of the attack. Confidence in the physician is of utmost importance and is maintained more by consistency than by his professional status. Accordingly, the patient should be told that he has had a heart attack and the nature of the attack should be explained to him; but he should be assured that with some weeks of rest he will recover and will go back to work and this attitude should not be sabotaged by permitting anyone to tell him that he may not move his arms or legs, that he may not turn over in bed and that he must not worry about anything. Few people are so stupid, even in this benighted world, that the implication of this advice is not clear to them; it not only creates terror but by its inconsistency with the physician's optimistic predictions for the future destroys confidence in the physician and in his methods.

I cannot believe that simple movements

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of the body can be harmful. At the worst certainly they cannot be as harmful as the emotional effects induced by the warning that the patient must remain immobile. Finally I believe that such motions help to prevent thromboembolic phenomena and the shoulder hand syndrome. I actually require that patients exercise the hands and feet after the second or third day in most cases.

No more silly advice has ever been conceived than that represented by the admonition: "You must not worry and you must not think about business or your job and you must not get excited". In the first place, I cannot imagine anything that can create more anxiety for the patient than the notion (implied in such advice) that his heart is so fragile that it will disintegrate if he becomes worried or if he becomes excited. The patient knows, even if the physician does not, that such matters are beyond his control, that worry and excitement are unavoidable. In his attempts to follow such advice the patient suppresses his feelings and thus tension is generated. It is far better to encourage the patient to express his feelings for it is the emotional force that is retained within that does damage within, not that which is disgorged by expression.

Therefore, as early as possible in the attack—on the first day if the pain is relieved and there is neither shock nor heart failure—the patient is permitted to speak with those associated with his work or business so that he can relieve his mind of the responsibilities connected with any unfinished or pending projects. Thus anxiety regarding "matters that should be attended to" is minimized.

The senseless use of oxygen where it is not needed is another factor which impresses upon the patient the notion that he is close to death.

The following days, so frequently uneventful, should be treated casually insofar as the physician's and other attendants' demeanor is concerned. It is important for a physician to be able to make close and detailed observations without

the patient's knowledge and certainly without wearing an expression and manner of deep concern. Radio should be furnished almost immediately for amusement.

After seven to ten days, in the uncomplicated case, the patient should be propped up in bed and made to feed himself. At this time he may have television, although watching boxing matches and other sports are prohibited for the time being. He is encouraged to read.

GRADUAL RESUMPTION OF ACTIVITY

After four to six weeks he is ambulated. At this time activity is automatically limited by the weakness in the legs and lack of equilibrium. He is urged to get about and when he can negotiate the distance to the bathroom the greatest single step in morale building and rehabilitation has been achieved. There is no greater, no more deeply significant symbol of human dependence, inadequacy, and indignity than that represented by that onerous contrivance, the bed pan.

From here on the patient is activated as rapidly as possible. At two and one half months or earlier, if possible, he is encouraged to return to clerical or executive occupation on a part time basis. Usually the longer the period of inactivity the more apprehension and tendency to invalidism occurs. Certainly nothing is as completely rehabilitating to the patient's morale as the successful return to his work.

The family is warned to refrain from annoying the patient with a multitude of don'ts. He *may* stoop down, he *may* tie his own shoe laces. He *may* lift a window sash. He *may* move a chair. He *may* climb stairs albeit slowly. He *may* worry. He *may* get excited. He *may* indulge in sexual relations. If he becomes angry he should say just what he thinks. He does not need to go to bed at any special time. He can rest at mid-day or for an hour before dinner.

SEXUAL ACTIVITY

The problem of sexual activity is all too frequently neglected. I make it a

point to discuss this subject at the time that sexual activity should be resumed. In uncomplicated cases this is at two months. Not only does 'excessively prolonged abstinence give rise to powerful unconscious as well as conscious tensions but also it has been my observation that most persons place great store by their sexual prowess and it is certainly true that most men who are not performing this function at adequate intervals have a feeling of inadequacy which spreads to all areas of activity and self appraisal. In addition there are guilt feelings toward the marital partner. The same applies to most women. Thus, I consider that one of the most important ways in which we can build morale is by encouraging the resumption of sexual relations.

Unfortunately sexual activity along with almost every other activity which gives pleasure has fallen into disrepute. We shall not have time to pursue all of the ramifications of this subject. I must say that with rare exceptions my patients have not had difficulty during or as a result of sexual relations. Two or three patients with the anginal syndrome have had to use nitroglycerine with occasional intercourse. Only one patient had to use it every time.

Apparently the notion is prevalent that sexual relations cause a great strain on the heart. While few scientific observations have ever been made on this subject experience with cardiac patients does not support it. Sexual relations do not seem to be excessively dangerous unless carried out with somebody else's wife.

EMOTIONAL ADJUSTMENT

There can be but one way in which an individual with an unalterable lesion can live a satisfactory and useful life. He must learn to do that which he must do to take care of himself as a matter of habit, and aside from this he must live every day as if he were going to live forever. Patients who are taught to be continually anxious about themselves, to live in unrelenting expectation of sudden disaster cannot function well and cannot

find life good. Every step and every attitude that I have described here is calculated to bring about a pattern of emotional adjustment at the healthiest possible level. Failure to do this results in much anxiety and this leads to pains in the chest that are mistaken for cardiac pain and all too often lead to further restriction and more anxiety and more invalidism. Here the physician is in a most difficult position. It is extremely difficult to know whether pain in the chest in such cases is due to cardiac events or not. Clinical judgment and electrocardiographic know-how are essential. It is necessary to realize too, that the effect of concluding that the pain is cardiac when it is not is just as harmful as the effect of concluding that it is not cardiac when it is. Physicians who cannot stand the responsibility of such decisions, who must always do what they think is "playing it safe" should refer these patients to those who do not feel so insecure.

Necessarily the greater the damage sustained by the heart in this as well as in other cardiac disease the greater will be the difficulty encountered in maintaining cardiac efficiency and the greater will be the problems of psychologic adjustment. However, the same principles should be followed. Whatever medications he must take, whatever restrictions he must follow are to be made a matter of everyday routine but with the attitude that it is given to no one to know how long he will live and that he may as well live as if he is going to live forever. To accomplish this it will be necessary for the physician to know his patient well, to have long sessions with him, airing his anxieties, and his misconceptions, and frequently dealing with some of the personality difficulties that most of us have, and with whatever religious or philosophic resources the patient may possess.

Of course, not all patients can be rehabilitated and this applies to the psychological as well as physical rehabilitation. However, I have many patients who have been working for periods up to more

than twenty years following a myocardial infarction. Some have angina, some do not. Some have had two myocardial infarctions and some are taking mercurial diuretics regularly to prevent congestive heart failure.

WORK

Most of these do clerical or professional work. Some are artisans. None do extremely hard work.

The objective of rehabilitation in most persons with heart disease can be attained if proper attention is given to both the physical and psychological problems encountered. The patient who is self-employed is fortunate. But the patient who is not, frequently furnishes us with some of our more frustrating and tragic experiences. He has been taught that he can work and we are responsible for this teaching and when an examining physician for some industrial plant tells him that he cannot be hired he is left with precisely the problem he has feared and the physician is in the position of deceiver. The latter point is not made through preoccupation with the physician's personal problems. The importance of this point here is that the feeling that his physician has deceived him adds a great deal to the patient's demoralization, the destruction in a moment of weeks of morale building.

I do not know of any quick solution for this problem. Close cooperation between examining physicians and the patient's physician may do much to soften the blow of rejection but this is hardly our objective today. These people are employable. Necessarily, some jobs must be closed to them, particularly those that involve hazards to other persons. However, most of them who have not been doing very hard manual labor can go back to the jobs they left, some possibly on a part time basis. I believe that industry, given proper understanding by the profession will cooperate. But it seems to me that the extent to which industry can cooperate is limited by some of the provisions of the liability laws. Among the working public

whose jobs come under the exercise of these laws is a large group of people who have hypertension, who have heart disease and who are *going* to have hypertension and/or heart disease. It behooves them in cooperation with industry to seek to make such provision in the laws that will make it possible for industry to protect the cardiac's opportunity to earn a living without assuming any more than its proper share of the responsibility for what happens to the person on the job. Then more cardiac patients will be permitted to work, will feel useful, will be happier, and undoubtedly will live longer.

"A light heart lives longer"—(*Shakespeare*).

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PREVENTION AND MANAGEMENT OF HEART FAILURE: GENERAL PRINCIPLES AND THEIR APPLICATION *

HAROLD J. JACOBS, JR., M. D.
LAFAYETTE

Few other disease states have received the interest and respect of the practicing physician and the research laboratory as has the condition of heart failure. It is paradoxical that treatment is for the most part quite effective, yet much of the pathologic physiology is unknown.

It is impossible to categorize completely the prevention and management of heart failure, for many of the principles are applicable in both instances. Likewise, the treatment of the varying degrees of failure—mild, moderate, severe, intractable, acute or chronic—is similar in principles, the vigour with which it is approached being related to the severity, to the acuteness, and, as is sometimes overlooked, to the etiology of the failure.

PREVENTION

The best and most desirable method of preventing heart failure is the prevention of heart disease. This is an obvious and rather silly-sounding remark, but I make it with good intent. I would like to take advantage of my position today to stress

* Presented at meeting of the Louisiana Heart Association, May 15, 1957, in Shreveport, La.

the importance of early, adequate and prolonged treatment of all hemolytic streptococcal infections and the continued prophylaxis against infections of this type in individuals who have had rheumatic fever. Even though this plan of attack has received widespread publicity in the medical literature, many patients are still not being treated in this fashion. I realize that all of you here today use the treatment recommended by the American Heart Association,¹ but I will reiterate the principles briefly—treatment of streptococcal infections with therapeutic doses of antibiotics for at least ten days and prevention of streptococcal infections in rheumatic individuals for life by a monthly intramuscular injection of bicillin or daily doses of sulfadiazine or oral penicillin.²

An excellent example of what can be done in the prevention of heart disease is typified by syphilitic heart disease. A mere ten years ago, this was a common entity, particularly on the wards of Charity Hospital. Today, it is a comparative rarity, thanks to early and adequate treatment of syphilis.

The question of preventability of coronary or arteriosclerotic heart disease has received considerable attention in both the medical and lay press lately. From the evidence at hand, it seems that diet, and particularly a high fat diet, has been incriminated as the causative factor. Prevention of coronary disease in a susceptible population by elimination of fats in the diet remains to be proven.

Prevention of hypertensive heart disease meets with its greatest success in those instances in which the hypertension can be cured, not just temporarily alleviated, by surgical means. Examples of this are coarctation of the aorta, pheochromocytoma, and unilateral renal disease.

There are other forms of preventable heart disease, but time does not permit their receiving consideration.

In the presence of pre-existing heart disease, much can be done towards the prevention of the development of heart failure. The rapid strides in cardiac di-

agnostics and in surgical techniques in the last ten years makes this particularly true. Examples of surgical correction of heart disease are familiar to all of you—mitral valvulotomy, pulmonary valvulotomy and infundibulectomy, closure of septal defects and ligation of persistent ductus arteriosus, to mention just a few.

The problem of pregnancy in heart disease bears special consideration. Pregnancy should be avoided in certain cases. It is true that the maternal mortality rate is only slightly increased in rheumatic heart disease³ and that interruption of pregnancy is rarely indicated for cardiac reasons; however, interruption of pregnancy should be *considered* in the presence of tight mitral stenosis, increased pulmonary pressure, active rheumatic fever, subacute bacterial endocarditis and increasing hypertension.^{3, 4} If interruption becomes necessary, it should be done as early as possible after compensation has been restored, but usually should not be attempted after the sixth lunar month. Termination of pregnancy before term to avoid the strain of labor is unnecessary since heart failure rarely develops during labor.⁵

There are many other things which should be done in the presence of heart disease to prevent heart failure. The activity of the patient should not exceed what the heart is capable of taking care of, so emotional and physical strain should be limited, especially in coronary and hypertensive heart disease. Respiratory infections should be avoided or treated early. Chronic cough should be controlled, for the strain involved may precipitate failure. Rapid or excessive intravenous fluid administration must be avoided, particularly with respect to sodium-containing solutions. Obesity should be reduced, since this causes extra work for the heart. Master et al have reported a 35 per cent reduction in cardiac work by the loss of 12 to 15 per cent of body weight in obese patients.⁶ Of course, along with dietary management, it may be necessary to restrict sodium intake.

Then there is a group of conditions which may cause heart failure without the presence of primary heart disease. These are arteriovenous fistula, anemia, beri-beri, hyperthyroidism, hypothyroidism, and pulmonary disease. Correction of these diseases will prevent heart failure.

So much for prevention.

MANAGEMENT

In the management of heart failure, the first thing to be done is to make sure the patient has heart failure. The things most likely to be confused with it are pulmonary disease, anemia, and constrictive pericarditis. After one has established the fact that the patient has heart failure—at this point we could, but will not, get into the very controversial subject of “what is heart failure”—and before treatment is begun, an accurate diagnosis should be made. By this I mean an accurate etiologic, anatomic, physiologic, and functional cardiac diagnosis as outlined by the New York Heart Association.⁷ Such a diagnosis will dictate in large part what should or should not be done. The objectives of treating heart failure are twofold: first, to treat the failure per se and, second, to treat the underlying condition which has caused the failure.

In some instances, the underlying condition must be treated before the failure can be controlled. An example of this is failure resulting from longstanding paroxysmal auricular tachycardia. Stopping the tachycardia by tricks of vagal stimulation, such as carotid sinus pressure, eyeball pressure or pressure on the supraorbital nerve, usually results in rapid recovery from the failure. Other examples such as this are thyrotoxicosis and severe anemia.

The following general principles of treatment are not listed in the order of their importance or in the sequence in which they should be used, for this will differ from one case to the next.

The patient that presents himself with heart failure is usually quite apprehensive, particularly in the acute form. Mental rest is important, for agitation increases the work load of the heart by in-

creasing blood pressure and pulse rate, so make every effort to relieve the apprehension. Be optimistic. In the long-term care, keep the sickroom pleasant, quiet and as cheerful as possible. Restrict visitors, and this should include aunts, uncles, cousins, grandchildren, etc., who usually say they are not visitors but are part of the family. The patient should not be allowed to conduct business from the bed. This may be modified in some instances, for the worry about the business may be worse than the work involved in making temporary arrangements.

Physical rest is probably the most important part of the management of heart failure. In many instances rest alone will control the symptoms and signs. In heart failure, cardiac output is insufficient to meet the demands of the body, but this output may be adequate at rest. The failing heart is unable to increase its output in proportion to increase in activity. This leads to inadequate blood flow to the kidneys, to increase in venous pressure, to increase in venous return to the heart, and in left ventricular failure, to pulmonary congestion and dyspnea. On the other hand, rest improves cardiac efficiency by decreasing blood pressure as a result of lower peripheral resistance, by slowing the heart rate, allowing a longer period of diastole or rest for the myocardium, by less venous return, and by less oxygen requirement, which tends to decrease dyspnea which in turn cuts down on the muscular effort of respiration.

Even the question of rest is a controversial one. What is the best position for rest in failure? The dyspneic patient feels that he must sit up in bed or at least be propped up on several pillows, but is this a restful position? It has been advocated that blocks be put under the head of the bed in order to incline the whole bed at an angle of about 30 degrees.⁸ This is better than elevating just the upper segment of the bed. On the other hand, the sitting posture in a chair in the treatment of failure has very strong proponents.⁹ This decreases venous return to the heart

by pooling of blood and by immobilization of edema fluid in the lower extremities.

What degree of rest should be ordered? Theoretically, it should be absolute; however, absolute bed rest has disadvantages. It tends to emphasize the seriousness of the situation and may make the patient more apprehensive. It may cause constipation, abdominal distention, bed sores and even osteoporosis if prolonged. It is best to allow the patient bathroom privileges or the use of a bedpan. Frequent moving and deep breathing is also indicated to prevent the development of pneumonia and thromboembolism.

How long should rest be continued? There is no definite answer to this question for the ideal duration of rest has not been established. Some feel that bed rest should be prolonged in order to let the heart recover. Obviously the etiology of the failure has a great deal to do with this question. If the failure is secondary to a recent coronary occlusion or to activation of rheumatic fever, the period of bed rest should be longer than if the failure alone were being considered.

The use of oxygen has long been recognized as being of value in the treatment of heart failure, though in the majority of instances, arterial oxygen saturation is normal. This may even be true in the cyanotic patient where the cyanosis may be due to stasis of blood in the skin from elevated venous pressure rather than from actual anoxemia; however, oxygen should be used since most patients experience subjective improvement from its use, since it reduces the work of breathing, and since it is insurance against oxygen lack, to which the failing heart is particularly susceptible. In the presence of pulmonary edema, oxygen under a pressure of 5 to 8 mm. Hg. may be of considerable benefit, increasing oxygenation of arterial blood and even more important, decreasing venous return to the heart, helping to clear up the pulmonary edema.¹⁰

Diet is very important in the management of heart failure. During digestion and assimilation of food, cardiac output

may increase as much as 30 per cent and this increase in work may last two to four hours.¹¹ Fortunately most patients are not interested in food for the first few days. When the patient starts to eat, some degree of undernutrition is aimed for, for this results in a decrease in metabolic rate, lower cardiac output and lower blood pressure and pulse rate. This type of diet is particularly indicated in the obese patient. Undernutrition also increases the vital capacity and tends to induce diuresis.¹² Small frequent feedings are given to prevent gastric filling which would decrease vital capacity. A bland low-residue diet is used to prevent distention.

Reduction of sodium intake is the most important part of dietary management since the retention of fluid and increase in blood volume are dependent upon sodium retention. A patient in failure should not be allowed more than one gram of sodium chloride a day to begin with. This may be achieved with the Karrell diet, which consists of 800 cc. of skimmed milk only per day. More rigid salt restriction may be found necessary. In such a case, some may find the diet recommended by Olmstead et al¹³ to their liking. This diet consists of 1150 cc. of beer daily. It supplies 480 calories, no salt at all and is an excellent diuretic. Let me emphasize at this point that it is extremely important to keep in mind the amount of sodium contained in the patient's water supply. It imposes difficult and rather futile restrictions to put a patient on a diet limited to 200 mgm. of sodium per day and then to overlook the fact that he may get more than this amount from the water he drinks. In order to make a low-salt diet more palatable, salt substitutes may be used, but since some of these contain potassium, they should not be used in the presence of severe renal disease.

Water restriction is not necessary, even in the presence of edema, for when on a low-salt diet, water acts as a diuretic. The patient should be allowed water as his thirst dictates and should not have it forced upon him.

Since one of the pathological states found in heart failure is increased blood volume, the rapid removal of 350 to 1000 cc. of venous blood is often dramatic in its effect and oftentimes life-saving. Almost the same thing may be accomplished by the application of tourniquets to the four extremities. These tourniquets should be applied as close to the trunk as possible and tight enough to occlude only the venous return. The hazard of phlebothrombosis with this procedure must be kept in mind. Phlebotomy may be very effective in left ventricular failure but is rarely of benefit in right ventricular failure secondary to pulmonary disease. Obviously a phlebotomy should not be done in the presence of anemia.

The accumulation of edema fluid and serous effusions makes it difficult for the body to get rid of its excess sodium and water. In addition, pleural effusion may be a mechanical interference with respiration. When this occurs, removal of the fluid by thoracentesis is indicated. Recently, the pleural space has been likened to a sump, with the recommendation that all pleural effusion, regardless of its effect on respiration, be withdrawn as a further means of relieving the body of salt and water, and that this removal of fluid from the chest be continued as long as it continues to appear.¹⁴ Abdominal paracentesis for the presence of ascites usually is not indicated unless there is marked distention and unless it does not respond to treatment. Subcutaneous edema usually disappears with the control of heart failure and only rarely is the use of Southey tubes necessary.

Many surgical procedures have been used in the management of heart failure. Though a functional class four patient is not an ideal candidate for a mitral valvulotomy, this procedure may be a life-saving measure. In chronic heart failure which is difficult to control, complete thyroidectomy has proven of some benefit. There are times when surgery is a must, for example, decortication in constrictive pericarditis (though this is not

true heart failure) and closure of the fistula in arterio-venous aneurysm. One operation which as yet has not received much favor in this country for the control of heart failure is ligation of the inferior vena cava. This is usually reserved for cases of intractable failure and is said to be particularly indicated in mitral and combined mitral and aortic disease.¹⁵ Improvement is reported to be immediate, but mortality high. Where persistent heart failure is due to recurrent pulmonary emboli from the lower extremities or pelvis, inferior vena cava ligation is the treatment of choice.

Now, what about the little luxuries that the patients usually ask about when they begin to feel better—the question of the use of tobacco, alcohol or coffee. In *normal* man, cigarette smoking causes an increase in peripheral resistance, a decrease in venous return and a decrease in minute output.¹⁶ It also causes a significant rise in coronary blood flow and heart rate and a significant decline in coronary vascular resistance and myocardial extraction of oxygen and glucose.¹⁷ Let me emphasize that these effects are in normal man. The EKG changes caused by smoking in the presence of coronary artery disease are well known. Smoking has no direct effect on heart failure, however, it may aggravate the situation by causing coughing or palpitation, to say nothing of the effects of the carbon monoxide inhaled. Coffee or tea is allowable in small amounts, though they may cause nervousness, irritability, and even palpitation. Remember that they are good diuretics, having much the same effects as aminophylline. There is no contraindication to small quantities of alcohol.

During the convalescent period, the heart failure patient should be returned to activity with gradually increasing exercise. Modified bed rest should be continued until recovery seems complete. These patients should be encouraged to return to work, depending upon their functional classification, even if it is necessary to modify their work according to their tol-

erance. A study by Goldwater et al shows that employment has no harmful effects and that progression of heart disease is related more to age than to employment.¹⁸

Unless the episode of heart failure was due to some temporary and transient etiology such as infection or anemia, the same principles, in some degree, of the prevention and management of heart failure must continue to be applied in the long term care of the patient with heart failure.

REFERENCES

1. Committee on Prevention of Rheumatic Fever and Bacterial Endocarditis of the American Heart Association: Prevention of rheumatic fever and bacterial endocarditis through control of streptococcal infections, *Circulation* 11:317, 1955.
2. Mortimer, E. A., Rammelkamp, C. H.: Prophylaxis of rheumatic fever, *Circulation* 14:1144, 1956.
3. Hamilton, B. E.: Cardiovascular problem in pregnancy, *Circulation* 9:922-933 (June) 1954.
4. Horowitz, W.: Management of the pregnant patient with cardiac disease, *New England J. Med.* 252:511 (March 31) 1955.
5. Friedberg, C. K.: *Diseases of the Heart*. Philadelphia, W. B. Saunders Company, 1950.
6. Master, A. M., Stricker, J., Grishman, A., and Dach, A.: Effect of undernutrition on cardiac output and cardiac work in overweight subjects, *Arch. Int. Med.*, 69:1010 (June) 1942.
7. Criteria Committee of New York Heart Association: *Nomenclature and Criteria for Diagnosis of Diseases of the Heart*, New York, J. J. Little and Ives Co., 1939.
8. Sodeman, W. A.: *Pathologic Physiology: Mechanism of Disease*, Philadelphia, W. B. Saunders Co., 1950.
9. Levine, S. A.: The myth of strict bed rest in treatment of heart disease, *Am. Heart J.* 42:406 (September) 1951.
10. Barach, A. L., Martin, J.: *J. Clin. Investigation*. 15:466, 1936.
11. Grollman, A.: Physiological variations in cardiac output in man. Effect of ingestion of food on cardiac output, pulse rate, blood pressure and oxygen consumption of man, *Am. J. Physiol.*, 89:366 (July) 1929.
12. Wohl, M. G., Shuman, C. R., and Alper, C.: Nutritional and metabolic aspects of congestive heart failure, *Arch. Int. Med.* 96:11 (July) 1955.
13. Olmstead, E., Cassidy, J. E. and Murphy, F. D.: The use of beer in the low salt diet with special reference to renal disease, *Am. J. Med. Sc.* 230:49 (July) 1955.
14. Schemm, F. R., and Camara, A. A.: The relief of resistant edema by utilization of a sump phenomenon, *Circulation*. 11:411 (March) 1955.
15. Bernath, J., Guillemot, R., Samuel, P., and Heim de Balsac, R.: Vena cava inferior ligation in congestive heart failure, *Am. Heart J.* 50:112 (July) 1955.
16. Kreuziger, H., Heinecker, R., and Kemper, F.: The effect of cigarette smoking upon circulation, *Ztschr. Kreislaufforsch.* 44:879 (Nov.) 1955.
17. Barger, L. M., and others: Effect of cigarette smoking on coronary blood flow and myocardial metabolism, *Circulation*. 15:251 (Feb.) 1957.
18. Goldwater, L. J., Bronstein, L. H., and Kresky, B.: Comparison of working and non-working cardiac patients, *A.M.A. Arch. Indust. Hyg.* 5:485 (May) 1952.

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PREPARATION FOR LARGE SCALE INFLUENZA EPIDEMIC

It is the considered judgment of those who have access to adequate epidemiological and virological information that there will probably be an outbreak of a rapidly spreading type of influenza in the United States in the coming fall and winter. It is anticipated that in addition to the usual amount of influenza there will be outbreaks of the oriental type of the disease recently prevalent in the Orient. According to reports from the Public Health Service, 13,000 confirmed cases have been reported in this country up to the middle of

August.

Influenza epidemics have apparently occurred in all ages past and there is a tendency for intensification of influenza to appear at intervals of about twenty years. Epidemics of influenza started in northern China in January of this year, and have appeared successively in Hong Kong, Singapore, Taiwan, the Philippines, the Malayan States, Indonesia, Japan, and India, and more recently, in this country. This indicates that a recrudescence of the disease may be reasonably anticipated in the near future.

The problem was recognized by physicians in the U. S. Army medical service, and studies of the epidemiology of the disease were undertaken in various laboratories, particularly the Army's 406 Medical General Laboratory in Japan. It was established there and in other laboratories working at the same problem that a new strain of type A influenza virus has appeared. Because it is a new strain there is no natural immunity. On May 22, prototype strains were sent to vaccine manufacturers. Preparations for the production of a suitable vaccine were undertaken. It was planned that 60 million ccs. would be available by February 1, and probably sooner, and that some lots would be ready for distribution after the middle of August.

Clinical information regarding the Oriental influenza indicates that the attack is similar to the type physicians are familiar with. The incidence and attack rate averages approximately 20 per cent with various reports running from 15 to 50 per cent. The incubation period is probably one to two days, and the contagious period uncertain, one to five days. It is transmitted as is other influenza by droplet infection. The symptoms of fever, prostration, headache, and lassitude develop rapidly, fever varying from 100 up to 105. Symptoms are accompanied by coryza. The course is three to five days. Complications are said not to be serious, except in the very young and in those debilitated. The mortality is low and said

to be in the Orient 0.2 of 1%, but in this country only three deaths have been reported.

The treatment recommended is similar to that familiar to physicians generally, with the added statement that the antibiotics, while of little value in affecting the disease process provoked by the virus, are of substantial value in protecting against secondary infection. The treatment thus becomes supportive and protective.

The brief duration of three to five days is usually followed by a period of prostration or weakness lasting probably twice as long as the fever.

The prospect of any disease process, even though short in duration, affecting 20 per cent or more of the population, is one which would properly give physicians concern. The president of the A.M.A., Dr. David B. Allman, has stated the epidemic may never strike this country but the American Medical Association is anxious to have practicing physicians mobilized and alerted in case an outbreak does occur. The Board of Trustees has set up a special committee on influenza to implement the informational and operational phases of the program which the A.M.A. has proposed. It is felt that the American Medical Association can provide leadership to acquaint state and county medical societies, as well as the general public, of the situation. The rapid onset of influenza of this type makes it necessary to consider the problem well in advance and to encourage the development of plans prior to any massive outbreak. Articles in the *Journal of the A.M.A.* will appear providing information on the clinical aspects and current information concerning the disease. Public information will be provided by the Public Relations Department.

It is urged that state and county medical societies prepare or develop adequate stand-by programs and plans to cope with such epidemics as may develop. The Orleans Parish Medical Society has undertaken to organize a suitable program, and it is learned through the Washington

News Letter that Mississippi has already laid out a complete statewide emergency program. It is stated that consideration should be given to the provision by which expanded professional care could be gained through utilization of all medical personnel regardless of type of practice. Hospital facilities should be made available through curtailment of elective surgery and diagnostic studies, and so forth. The vast majority of patients will of necessity be cared for in their homes. The need and possible scarcity in the handling of a massive epidemic would be one of medical supplies, patient care, and physicians' services. It may be expected that as usually happens the opening of schools and the onset of cool weather will be followed by a sharp increase in the amount of respiratory infection. Under such conditions, the Oriental influenza infection with a comparatively nonimmune population could reasonably be expected to spread rapidly. The only protection is the use of the special vaccine for this particular strain. The Board of Trustees of the A.M.A. and the Public Health Service have approved a statement which in part says that "the Public Health Service in cooperation with the medical profession will stimulate and promote a nationwide voluntary program of vaccination against the prevalent strain of influenza." There is, however, no plan for the use of federal funds for the general purchase or administration of the vaccine.

Maximum public use of the vaccine is being urged as rapidly as supplies become available. The dose will be 1 cc. A single injection is considered to be about 70 per cent effective, and protection develops in ten to fourteen days. The Public Health Service has urged that particular consideration be given to the vaccination of those whose services are imperative for the care of the sick and those needed to maintain other essential functions.

Not before now has it been possible to estimate even the probable appearance of an epidemic of influenza. The combined efforts of epidemiologists and virologists

indicate strongly that one is approaching. With the knowledge gained from the epidemic of 1917-1918, that a good bed was better than unlimited will power in combatting the disease, and that added assistance can be gained from the use of anti-

biotics, the epidemic that is probably approaching should give no cause for alarm. However, to minimize its effects careful planning, and energetic pursuit of the immunization program should be undertaken by the physicians.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

REPORT OF FIFTH NATIONAL MEDICAL CIVIL DEFENSE CONFERENCE

The Fifth Annual National Civil Defense Conference held at the Waldorf Astoria in New York was attended in the interest of the Louisiana State Medical Society. The program was sponsored by the Council on National Defense of the American Medical Association and included top men in each phase of the problem, including Dr. David B. Allman, President of the A.M.A. who sounded the following warning to physicians:

"It is apparent that every surviving physician—specialist or general practitioner—from a rural area or a metropolitan center, will have a direct medical responsibility in the management and care of mass casualties in the event of atomic warfare. This is a gigantic task which few physicians fully comprehend."

The committee elected to print the following paragraph at the beginning of its program:

"The ultimate responsibility for the health and medical care of our nation's population, in peace or war, rests on the medical and allied professional groups and they can discharge such responsibilities wisely only if they are adequately informed and equipped. The purpose of this program is to better acquaint members of the medical profession, as well as other medical and health groups, to their responsibilities with respect to the hazards and effects of lethal radiation and radioactive fallout."

Three hundred physicians and national, state and local civil defense and health leaders attended the conference which began at eight o'clock in the morning, and continued through serious and grim discussions until five o'clock in the evening. Everyone present was impressed with the seriousness and sincerity of the speakers and the tragic facts of their respective subjects.

The administrator of the FCDA outlined federal civil defense affairs and plans outlined for

their implementation. The details can be found in pamphlets published by the FCDA.

Congressman Chet Halifield of California, Chairman of the Subcommittee on military operations, Committee on Government Operations, delivered a formal address on "Civil Defense—A Program of Federal Responsibility", in which he strongly urged federal leadership and funds to implement a federal program. The following is quoted in part from his plea.

"I shall attempt to discuss the federal program from the legislative standpoint, indicating where we stand today in our endeavor to build a responsible federal program of civil defense.

"The reason for such a program is the evident fact that nuclear weapon technology has far outpaced the techniques of civil defense preparedness. The hydrogen bomb following on the heels of the atomic bomb, and new vehicles for delivery of such weapons promised in the rapid development of long range missiles, create new dimensions for the tasks of civil defense.

"Traditional techniques attuned to conventional weapons and the possibility of isolated attacks on limited areas will no longer serve. The civil defense job today is to provide protection for the entire population. For several years, the official policy has been that distance between yourself and the point of anticipated weapon detonation; in short, to evacuate. As we run out of distance, as the major population centers become exposed to multiple megaton bomb attacks, and the entire country becomes subject to radioactive fallout, then the primary question is one of providing shelters for all the people.

"Adequate shelter is only the starting point of an effective civil defense program. The total task of civil defense against a mass attack embraces the initial saving of lives, the treatment and care of millions of casualties, and the preservation of the means of our very survival.

"Obviously, an important part of the recovery effort will have to be borne by the medical pro-

fession, without encroaching on the technical areas of discussion to be covered by the extremely qualified speakers who come later in the program, I want to congratulate the medical profession for its efforts to prepare for this unprecedented task. This meeting today is evidence of your genuine interest in doing your part in a possible civil defense emergency.

"The magnitude of the total civil defense task facing our country has made a tremendous impact on the members of the house military operations subcommittee, of which I am privileged to be Chairman. Our study and investigation of civil defense led us to conclude that to fulfill its constitutional responsibility for national defense, the federal government must assume a positive leadership in civil defense. The states and localities must be assisted in their own efforts to provide for the safety of their people, and in addition, the federal government must undertake to provide a comprehensive national program within which the states and localities can work.

"One of the obstacles now facing the proposed legislation at this time is that its implementation will cost money. As you are no doubt aware, the present Congress is not in a mood to encourage additional federal expenditures. Not since I have been in Congress have I seen a more economy-minded session. . . .

"While these administration amendments would permit additional federal contributions to the states for various limited purposes, they would not materially change the basic philosophy of that law which gives (I should say "abandons") primary responsibility for civil defense to the states and localities.

"An executive which has not asserted positive, aggressive leadership in behalf of civil defense, and a Congress bent on slashing appropriations to the bone are not a winning combination for the goal we have set—a new charter for civil defense. Our subcommittee is determined, nevertheless, to do everything in its power to put across this legislative program. . . .

"One of the compelling reasons why the federal government must accept the major responsibility for civil defense today is that the nature of the hazards confronting us can never be fully understood by civil defense planners in local units of government. The federal government should make full use of the knowledge and talents available in the weapons effects field and devise a comprehensive civil defense program for the entire country.

"Not only is this a constitutional duty of the federal government; it is a practical necessity if we are ever to have an effective civil defense program. Obviously, the success of any nationwide program of this type will depend on strong

support and participation by the states and localities. But the starting point must be the formulation of a realistic program and the provision of necessary financial assistance by the federal government.

"For this reason, I appeal again, as I have in the past, to the President and the executive branch to recognize and accept this responsibility. If the executive branch will do the part which it can do best under our governmental system—provide a focus of national leadership and a rallying ground for public support—then the congress, I am sure, will do its part by voting the authorizing legislation and the funds. In the meantime, our subcommittee intends to keep reminding both branches of government—and the public as well—that the civil defense job still remains to be done. . . ."

Following the most convincing address of Congressman Halifield, Mr. Jack C. Green, Director of Radiological Defense Division Health Office F.C.D.A., Mr. Benjamin C. Taylor, Director Engineering Office, F.C.D.A., and Dr. M. M. Van Sant, Director Medical Care Division Health Office, F.C.D.A., conducted a two hour symposium on "Meeting Radiation Hazards and Delineating Programs and Plans."

The theme that ran through the whole discussion was national survival, as distinguished from the individual care of particular patients. The radiological briefing outlined the whole scope of irradiation from initial damage to delayed effects on human subjects and subsequent effect on animal and vegetable life by fallout stressing the hazards of a possible permanent infestation of animal bone.

The whole subject of radiation effects was discussed in minute detail which would be too lengthy to delineate in this report. The controversy over the possibility of genetic changes in future generations was discussed at length here and later in the program. It was urged that decision and judgment on this subject be reserved until all facts are reported—and in reading reports you are urged particularly to note the background of the individual giving the report and to consider his capabilities and competency to make a report on the particular phase of irradiation about which he might be speaking or writing.

Protection from irradiation was discussed at length. The interposition of various materials between the subject and the bomb were outlined. Reinforced concrete was considered the best irradiation shield, although it was stressed that nearly any substance affords some degree of protection. It was brought out that three feet of earth affords a complete shield and absolute protection from bomb irradiation and fallout.

Dr. Van Sant outlined the gruesome possibility that the United States, following a mass bombing, could sustain a loss of two-thirds of its population. This, he stated, could possibly occur in the 1960's, when the enemy potential would be strong enough to deliver such a blow.

He outlined the return of primitive care of the mass casualties. Most hospitals would be rendered useless or destroyed. Medical men would be scarce with fewer, and in most cases only primitive tools with which to work.

The old barbaric custom of caring for the most seriously injured last would, of necessity, have to be revived. He said "with roughly two-thirds of our population killed or injured one-third relatively uninjured, that first and second priorities for medical care should go to those who could return to work immediately and those incapacitated for a short time. Third and fourth priorities were assigned to those whose recovery will, in time, increase our work force and to those who must have medical care, but which can be deferred.

"Final priority will be given to those who may well be expected to die, regardless of their treatment or to those for whom treatment would mean the denial of survival to higher priority groups, due to time of ministering personnel and the amount of supplies required."

Following this, a symposium on the effects of irradiation was conducted by Dr. Eugene P. Cronkite, Head of the Division of Experimental Pathology, Medical Department, Brookhaven National Laboratory; Dr. Henry Bowman, Chemical Engineer, Dean of Drexel College; and Dr. Cyril Comar, Chief of Biomedical Research, Oak Ridge Institute for Nuclear Studies.

Dr. Cronkite opened his remarks with the observation that there is as yet, no satisfactory solution to civil defense.

He outlined the sources of information that are being studied. Hiroshima and Nagasaki data, the 1954 Pacific Island studies, reactor accidents, and therapeutic irradiation.

He outlined the effects on the body at varying distances from the explosion and the possible survival after exposure to large doses of irradiation. He stated that with an exposure of 200 R or less, survival would be expected, and that it might be possible to survive doses up to 800 R., but that it was impossible to stand 800 R. or more and that death in such case was inevitable.

He touched on the subject of the contamination of food from fall out and the harmful effects of ingestion of contaminated food and water, and breathing contaminated air.

The simple precautions that can be taken were outlined and recommended. Washing the body with soap and water; putting a wet wash cloth over the face to filter air, and sprinkling the

dust on the ground with water to hold down air pollution; tin cans as protection for food was considered good. Shelters, he thought, are the best method of protection for all.

Professor Bowman followed with data from the Nagasaki and Hiroshima studies; making the point that the bombs used now are one hundred and more times more destructive than those used at that time.

He showed lantern slides and pictures of the destruction wrought in these areas, and noted the fact from his pictures that anything that acts as a shield gives considerable protection. The slides included a demonstration of the bombing effect on different types of construction. Reinforced concrete walls withstood the blast best, while brick and concrete blocks made a poor showing.

He also stressed the magnitude such a disaster as nuclear bombing would cause and the chaos that would follow the blow. Psychological and primitive medical measures to combat this were sketchily outlined.

Dr. Comar was next on the program and gave a discourse at some length on the effect of fall out on animals and crops, and said that "strontium-90 is most important because it is readily taken up into all phases of biological life." The radioactive iodine was considered less harmful. Cattle can stand 300 to 400 times higher concentrations than humans, and they get 80% of their iodine from forage. "Very minor chances of much harmful activity on the thyroid gland would result." On the other hand strontium-90 goes into the stratosphere and is distributed world wide, where it will get into plants and animals.

The method of estimating strontium-90 is in terms of calcium and one microcurie to the gram of calcium was considered the maximum.

He outlined three phases of the study being conducted, as follows. 1. Survey of the amount of strontium-90 in body, soil etc. This information, he said, is coming in well. 2. Study of the metabolism of these items in the food chain. "Can we increase the calcium intake without increasing the strontium-90 intake? This will take much more work." He interpolated parenthetically that "calcium is absorbed better than strontium-90 and that milk will increase the absorption of strontium-90." 3. "At what level of strontium-90 do we need to worry? There is not much information on this now. Levels as now exist are not thought to cause damage. Much more experimental work needs to be done to determine what is the maximum amount of strontium-90 that we can stand."

Major General James P. Cooney, Deputy Surgeon General, M. C., U. S. Army sketched the military concepts of the medical management of

radiation casualties. He began by disagreeing with other members of the panel as to the total number of mass casualties at one time. He made the observation that we have excellent military defense, and that with the radar warning system to alert the air force the navy and the army, sufficient time should be obtained for the population to either take shelter or be evacuated, while the military should be able to reduce the attacking force by considerable numbers. He placed the top figure as only twenty million casualties!!

In handling of casualties he put "more emphasis on first aid, self aid and 'buddy' aid" Medical help may be two weeks off, and medical supplies will be curtailed and no luxury treatment can be given.

Man power will be short and he reiterated that the best chance for national survival will be to treat the least injured first. The best surgeons will be used to classify casualties for treatment. "If a soldier is burned on the face and hands and can still carry a gun he still works. The same holds true for the terribly irradiated. They must still fight since they will die anyway."

The subject of protective clothing was discussed; whether uniforms should protect against beta or gamma rays or both. He seemed to think that too much clothing would be in the way.

Dr. Jos. W. Howland, Chief, Medical Division A.E.C.P. followed with the civilian concepts of radiation casualties. "Panic and disorder will be inverse to the time of warning before the bomb hits" were his opening remarks.

He outlined the different sensitivity of the various organs and tissues of the body to irradiation, and stressed the variations of the irradiation syndrome, likening it to aplastic anemia. He also observed that children and the aged were more susceptible to irradiation than the mid-life age.

Decontamination of casualties was discussed. "All casualties must be screened before moving and clothing must be disposed of. Exposed areas must be washed and all hair clipped off." Personnel working among casualties should be evacuated after an exposure time equal to fifty-R.

Treatment of casualties was delineated. Washing the body with bland soaps for decontamination, and supportive treatment for a two weeks period. Antibiotics can be given after one or two weeks if available. He observed in passing that the efficaciousness of tetracycline was not proven. Control of hemorrhage was mentioned along with its prevention, if possible.

Transfusion for anemia if available, but "in the main medication should be simple and oral.

Little if any laboratory facilities will be available or needed."

Prophylaxis: Early warning, the fall out should be visible allowing evacuees to find clean areas and any form of shelter, which will reduce the dose to about half. "Three feet of earth covering reduces hazard by 1/5000 and you should remain protected for 36 hours. Self help is essential."

This concluded the symposium on radiation and radioactive fall out.

Colonel Francis B. Stewart, U.S.A.R. Consultant, Chemical and Biological warfare defense F.C.D.A. presented a film entitled "Treatment of Nerve Gas Casualties."

Experimental animals were used to demonstrate the rapidity of onset of symptoms and eventual death, unless the premonitory signs were recognized early and prompt treatment instituted.

It was stressed that the inhalation of only a small amount of the gas is necessary to produce disastrous results. Symptoms are present within two minutes. Weakness and lack of coordination are observed early. Frontal headache, pains in the eyes, contracted pupils, inability to focus the eyes, tightness in the chest, labored, distressed breathing, nausea, profuse perspiration follows, and finally convulsions and prompt death completed the picture.

The treatment must be rapid and energetic. Two milligrams of atropine intravenously repeated at five to ten minute intervals for three doses; followed by more oxygen if necessary. Recovery is prompt when treatment is instituted early.

The conference was closed by Dr. Cortez F. Enloe, Jr., member Committee on Civil Defense and Council on National Defense, AMA, who stressed the salient points made by earlier speakers.

He warned particularly about the widespread propaganda to prevent further atomic tests, and of the fallacious nature of sentimental judgments. He particularly warned about passing judgment on the ill effects of fall out before complete knowledge is available, and to "only take facts from known specialists in each field. We need more scientific data and knowledge from further tests. Each test gives new knowledge."

This brought to a close a day-long portrayal of the melancholy plight mankind will find itself confronted with unless international gangsterism can be suppressed, and the communist nations of the world returned to freedom with a peaceful coexistence under God.

William E. Barker, Jr., M. D.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

A FEW WORDS FROM PRESIDENT EISENHOWER

"There is one basic thing to remember about hiring workers who are physically handicapped. It is good business to hire them—good for the nation and good for the person. It makes an earner out of an American who would otherwise be relatively helpless. I would like to congratulate the citizens who understand this and are helping to promote the widespread use of handicapped workers.

"Now we must tell others about the value of employing the physically handicapped because two million Americans with physical handicaps are still waiting to be used. Two million Americans could enter the labor force today if they were properly prepared and equipped to do so.

"I urge all employers, therefore, to use the handicapped wherever possible. I urge all workers to accept their handicapped fellow Americans as their co-workers. In these demanding times the labor force of our nation is our most precious asset. Working shoulder to shoulder, the handicapped can add spirit and power to America as we seek to promote the strength of the whole free world."

NEW TEST FOR CANCER OFFERS LIFE FOR THOUSANDS

A nationwide program emphasizing an annual cytologic test for uterine cancer for all women is urged by Dr. Charles S. Cameron, former Medical and Scientific Director of the American Cancer Society, as a means of reducing the cancer mortality rate.

"Foremost medical opinion is convinced that if every woman in the country had this examination every year, the number of deaths from uterine cervical cancer would be cut by as much as 90 per cent," Dr. Cameron writes in a new 25-cent

pamphlet, *Cell Examination—New Hope in Cancer*, published today by the Public Affairs Committee, 22 East 38th Street, New York City.

"This would mean an annual saving of 16,000 lives," Dr. David A. Wood, President of the American Cancer Society, 1956-57, declares in the introduction to the pamphlet.

"To make any real dent in mortality figures," Dr. Cameron points out, "a campaign will have to be launched on a national scale that will be carried forward on several fronts at once."

FLAVONOIDS ARE VALUELESS IN DISEASE TREATMENT

As matters now stand, flavonoids are of "little or no value" in the treatment of disease and have no known nutritional uses, according to a report by two American Medical Association councils.

William N. Pearson, Ph.D., of the department of biochemistry of Vanderbilt University School of Medicine, Nashville, Tenn., wrote the report for the A.M.A. Councils on Foods and Nutrition and Drugs.

The report in the Aug. 10 A.M.A. Journal was prompted by "the recent upsurge of interest" in the flavonoids, particularly in the treatment of numerous diseases including the common cold, Pearson said.

Flavonoids are carbon-hydrogen-oxygen compounds that are widely distributed in nature as pigments in flowers, fruits, tree barks and vegetables. Their most important commercial source is citrus rind.

Considerable interest in the possible nutritional significance of these compounds was aroused in the late 1930s by Dr. A. Szent-Gyorgyi and co-workers who isolated "citrin" from citrus fruit peels and reported it to be effective in strengthening capillary and blood vessel walls against break-

age, Pearson said. Such breakage of capillary walls is supposed to occur in a number of diseases.

However, valid tests for measuring the effect of flavonoids on capillary walls have not been devised, Pearson said. An earlier belief that they were a type of vitamin has not been confirmed.

BRAIN GOES 19½ MINUTES WITHOUT OXYGEN

The period the brain can safely go without oxygen has been lengthened from the accepted five minutes to nearly 20—at least in one case, it was reported recently.

Four Illinois researchers told of a 24-year-old man whose brain was oxygen-starved for 19½ minutes during heart surgery, but who recovered with no permanent brain damage.

Damage usually occurs when the brain's blood and oxygen supply is cut off for more than five minutes, they said in the Aug. 10 Journal of the American Medical Association.

They attributed the safe recovery to the fact that the brain was "protected" by the effects of chlorpromazine (a tranquilizing drug given before surgery) and hypothermia (in which the temperature of the body is lowered to slow its functions and allow surgery on the heart).

PACIFIER RETURNING TO POPULARITY

The baby's pacifier, long condemned as unsanitary, tooth-deforming and disease-producing, is making a comeback.

Today many pediatricians and dentists are beginning to look on the pacifier as "at least a partial answer to the vexing problem of how to prevent prolonged thumbsucking and the dental disfigurement it often causes," according to an article by Peter C. Goulding, Chicago, an American Dental Association staff member.

He said bacteriological studies have shown that pacifiers are actually more sanitary than the thumb. In addition, because of their soft texture, pacifiers are far less likely than the thumb to force the teeth out of position.

Perhaps the most persuasive point in favor of pacifiers is the fact that children apparently give them up earlier and with less trouble than they do thumbsucking, Goulding said. One study showed that 28 children spontaneously gave up the pacifier at the average age of 14 months, he said in the August Today's Health, the American Medical Association's popular health magazine.

Most authorities agree that a "basic instinct of sucking" is apparently one of the factors behind the start of thumbsucking. The pacifier helps satisfy this need.

The article quoted Dr. Maury Massler, head of the department of pedodontics at the University

of Illinois College of Dentistry, who pointed out that thumbsucking in itself is not bad. But when it is practiced vigorously and during the eruption of the permanent teeth, malformation of the teeth can result.

EYE BLOOD CHANGES SERVE AS RESUSCITATION GUIDE

A once-infallible sign of death might now become a signal of a chance of life as well, a University of Michigan pathologist reported.

Dr. Jack Kevorkian, Pontiac, Mich., said in the Aug. 10 Journal of the American Medical Association that certain changes in the eye—known to occur at death—can also indicate that it is not too late to restart a suddenly stopped heart.

In recent years, sudden cardiac arrest has been overcome by opening the chest and restoring the heartbeat by hand massage and electric shock. This has become an almost common occurrence, mostly during surgery.

But the physician must know whether he still has time for this operation before the brain is permanently damaged by lack of oxygen. Certain changes in the blood supply of the eye's retina can serve as an indicator Dr. Kevorkian said. These changes can easily be seen through the ophthalmoscope, the flashlight-like instrument used by doctors to see inside the eye.

When the heart stops, the flow of blood in the retina's veins (those returning blood to the heart) becomes segmented or interrupted, while the blood in the arteries (those carrying blood from the heart) disappears altogether. The segments of blood in the veins continue to move for several minutes after the heart is stopped.

SYMPOSIUM ON FLUORIDES

The Institute of Industrial Health at the College of Medicine of the University of Cincinnati announces a three-day Symposium on Fluorides to be presented December 9-11, 1957, inclusive. The purpose of this symposium will be to present the most recent information that is available concerning the physiological behavior of the absorption of fluoride.

Discussions will include a brief review of what is known of fluoride metabolism and a considerable amount of data that have hitherto been unreported. The objectives of the symposium are to bring together and to present factual and scientific information on this subject to those who are working in the field of fluoride absorption.

The symposium will be open to physicians and dentists in industry and public health and to other professional persons who are interested in the subject. Attendance will be limited and early application is suggested. The registration fee will be \$50.

For further information and application blank write to Secretary, Institute of Industrial Health, Kettering Laboratory, Eden and Bethesda Avenues, Cincinnati 19, Ohio.

ANNUAL MEETING AMERICAN FRACTURE ASSOCIATION

The American Fracture Association will hold its 18th Annual Meeting at El Paso, Texas, Hotel Cortez, Monday, September 30th, Tuesday and Wednesday, October 1st and 2nd.

The meeting will be preceded and co-ordinated with The University of Texas Postgraduate School of Medicine, El Paso Division which will meet Sunday, September 29th, at the El Paso County Medical Society (Turner) Home, 1301 Montana

Street. The University of Texas Program is approved Category I by the American Academy of General Practice. The American Fracture meeting is approved Category II by the American Academy of General Practice.

The program on Sunday, September 29th, at the El Paso County Medical Society (Turner) Home will be on Orthopaedic Surgery. The American Fracture Association Meeting will be limited to fractures entirely.

Registration will begin Sunday for The American Fracture Association at Hotel Cortez.

The American Fracture Association Meeting will start at 8 A. M. each day, Monday, Tuesday and Wednesday. On Monday there will be a registration hour from 8:00 to 9:00 A. M., then the Scientific Program will begin.

BOOK REVIEWS

Medical Department, United States Army, Surgery in World War II. General Surgery, Volume II; Editor in Chief, Colonel John Boyd Coates, Jr., MC. Editor for General Surgery, Michael E. DeBakey, M. D. Associate Editors, W. Philip Giddings, M. D., Elizabeth M. McFetridge, M. A. Washington D. C, Office of The Surgeon General, Department of the Army, 1955. Washington, D. C. Government Printing Office. Price \$4.25.

To one who served in the Army Medical Corps in the Mediterranean Theater of Operations during the now not-so-recent "unpleasantness" the feeling of nostalgia engendered by reading this book on general surgery* in that theater comes as a distinct surprise. Names of places and rivers once so familiar, now half forgotten—Venafro, Cassino, the Volturno, the Rapido, the Arno, the Po—these names and many others give rise to a twinge of pain tempered ever so lightly by nostalgia. The reason for the element of pain in a wartime experience is obvious. Why there should be any element of pleasure in one's recollections of that experience is a matter for conjecture.

This book is entirely factual. Yet, without ever once saying so, it is a tribute to the medical officers in the Mediterranean Theater and to what they accomplished. In spite of the confusion and trials of such a cataclysm, the Medical Corps still had the foresight, the physical stamina, and the devotion to their profession to extract from their experience surgical principles which were of incalculable value in the conflict in which they were then engaged, which will be of value in future con-

flicts, and which are in large measure applicable to civilian medical practice.

That they succeeded in their endeavors is evident in this book, which points up, most strikingly, the improvement in the surgical management of trauma, particularly abdominal trauma, in World War II as compared with World War I. The principles of resuscitation and anesthesia and the management of wounds of the rectum and colon are as timely today as when they were evolved in the campaigns in the Mediterranean Theater between 1942 and 1945. There is no doubt that surgery today is profiting by the lessons learned at the accelerated pace demanded by wartime stress. "It's an ill wind that blows no good" may be a trite adage but its truth is proved in this book.

The volume is well organized. It is divided into three parts, (1) resuscitation, the control of pain, and anesthesia, (2) abdominal injuries, both their general management and the management of wounds of individual organs, and (3) colostomy.

The chapter on resuscitation of the severely wounded can be described as masterful. It is a most valuable piece of reading for any general surgeon, particularly the surgeon interested in abdominal surgery. This section could well serve as a guide for peacetime practice. The importance of a shock ward and the careful and judicious selection of the optimum time for surgery in shock are still lessons to be borne in mind.

The value of whole blood in traumatic shock and the necessity for giving it in adequate amounts are strikingly brought home by the description of how this knowledge was so painfully acquired. The highly original observations on pain in wounded men illustrate the scientific and yet wholly compassionate spirit in which the many problems

* Volume I of the general surgery series will appear later.

posed by the severely wounded were encountered. These casualties, it was found, did not have nearly as much pain as they were once thought to have, but anxiety was a major psychologic hazard. These observations have important therapeutic connotations which were profitably applied under field conditions and which are applicable in the trauma of civilian life. The recognition of the risks of delayed morphine poisoning and the physiologic basis for its development undoubtedly saved many lives in World War II.

Passing tribute must be paid to the medical officers and enlisted technicians who cooperated to compile the significant data upon which these conclusions were based. They carried out biochemical and other studies and performed postmortem examinations under adverse conditions of weather, poor physical surroundings, and, at times, enemy artillery fire and strafing from planes.

The statistics which necessarily form an integral part of the chapters on abdominal wounds are so presented as to be clear and useful without overpowering the reader, as he might at first fear. They will be of value for future military reference but they are of practical value at this time. One of the surprising facts to emerge from this study was the predominant importance of the number of organs injured (the so-called multiplicity factor) as compared with the influence of the time lag before surgery. Also surprising was the high case fatality rate in wounds of the stomach.

Colostomy was the routine procedure in wounds of the colon and rectum in World War II. The management of colostomies, the chapter which comprises part III of this book, could well serve as a definitive text on the subject. It should be required reading for the surgical resident as well as for the prospective military surgeon. The whole book, in fact, might well be required reading for medical students, internes and residents.

This book is excellently produced, on fine paper, in a most attractive format. The index has been carefully compiled and is very complete.

Any thoughtful reader will appreciate the untold hours of labor that have gone into the preparation of this volume. The editors are to be complimented on the results. Only skill, judgment and devotion to a cause could have accomplished them. It was a remarkable feat to present the principles and practices of general and abdominal surgery in so usable a form; the book could easily have become unwieldy.

Many of the lessons of World War I had to be learned over again in World War II. They were in the official history of the First World War but that history, unfortunately, was not very well known. It is hoped that the circulation of this and other volumes of the medical history of World War II will be so wide that the lessons so unhappily learned in it and so well set forth in this volume

will redound to our immediate benefit in any future war.

H. REICHARD KAHLE, M. D.

Dermatology; by D. M. Pillsbury, W. B. Shelley, and A. M. Kligman, Philadelphia, W. B. Saunders Company, 1956, pp 1331. \$20.00.

This is a new text book on dermatology, new in more ways than the fact that it was recently published. It is a large volume of some 1331 pages, yet it omits one of the bulkiest items in most texts, that of bibliography and references. It is different in that there are no lengthy discussions or listings of controversial or time-honored views on etiology and treatment. The knowledge and opinions of the authors are set down in an unusually clear and unencumbered manner which makes for enjoyable reading.

The first two sections of basic principles of skin disease and allergy (174 pages) is a remarkable and delightful condensation of our present knowledge on the subject which few students of dermatology will want to miss reading.

The illustrations (black and white) are well selected and liberally used.

While some dermatologists will not agree with all the views of the authors, all of them will agree that it is refreshing to get the personal viewpoints of such well known authorities as the writers.

LEE D. MCLEAN, M. D.

Bellevue Is My Home; by Salvatore R. Cutolo, M.D. with Arthur and Barbara Gelb, Garden City, N. Y., Doubleday and Co., 1956, Pp. 317, \$4.00.

A condensed version of this book was recently published in the Saturday Evening Post Dr. Cutolo, who is Deputy Medical Superintendent of Bellevue Hospital and has been associated with that institution for more than twenty-five years has been principally concerned with presenting to the laity a picture of the operation of a large general hospital. Bellevue is particularly suited for such treatment because its story is long and interesting and illustrates the progress and problems of modern large-scale medicine. The author's affection for his hospital colors his account but does not prevent him from describing some of the difficulties associated with the organization and maintenance of a hospital which holds 2700 patients and has an average daily population of 9700. After the first section of the book which shows Dr. Cutolo at work at Bellevue and tells how he became established there, the successive chapters are devoted to the individual services of the hospital and the spectacular emergencies and unusual diseases with which it has been concerned: The Normandie fire, the New York smallpox cases, and the Empire State Building catastrophe are described in detail. The lay reader will obtain

a reliable picture of progress in surgery, resuscitation and rehabilitation from this book. The physician will enjoy this account of the life and services of a great hospital and should not be disturbed by the simplifications required in a volume designed for the general reader.

MORTON M. ZISKIND, M. D.

Orthopaedic Surgery in European Theater of Operations, Surgery in World War II; by Mather Cleveland, M. D. (Ed.) Washington, D. C., Office of Surgeon General Dept. of the Army. 1956 pp 397. Price \$4.00.

This book, which is in a series dealing with the history of the management of war wounds, is especially well organized, beautifully illustrated and concise. Although portions of the book which deal with the organization of the consultant service and the infection of hospitals probably offer little to the practitioner in trauma, other sections of this history are most valuable to any and all who treat the severely injured patient. The sections on hospital facilities, equipment and the numerous well illustrated examples of improvised equipment should prove most valuable to those called on to care for serious skeletal injuries with limited equipment. The description of the management of large numbers of casualties and the management of wounds and compound fractures are sections which are exceptionally outstanding. The illustrations from "Fracture Facts" by Lt. Col. Philip S. Foisie, explaining the need for active exercise in the problem of rehabilitation of injured extremities is both amusing and timely and can well be adapted by any who must deal with the restoration of function in patients who have sustained injury.

Although the detailed study of "Battle Incurred Fractures About the Hip Joint" and "Jeep Injuries of the Hip Joint" are quite impressive, I doubt whether they add much to our knowledge of the management of these lesions which has not already been discussed more adequately and based on a rather larger series than included in this group. This volume should be available to all orthopaedic surgeons and industrial surgeons as well as those interested in developing a medical service for civil defense.

JACK WICKSTROM, M. D.

Dictionary of Dietetics; by Rhoda Ellis, Ph.D., New York, Philosophical Library, 1956, pp. 152, Price \$6.00.

This small volume is really more than a dictionary because it gives more explanatory information than is ordinarily found in a dictionary. It is planned for the layman as well as for the dentist, doctor, medical student, student nurse, dietitian,

nutritionist, and home economics major. The author is a home economist and a teacher of subjects relating to food and nutrition. Emphasis is placed on the practical application of diet with respect to background food habits and economic status.

MARY LOUISE MARSHALL

PUBLICATIONS RECEIVED

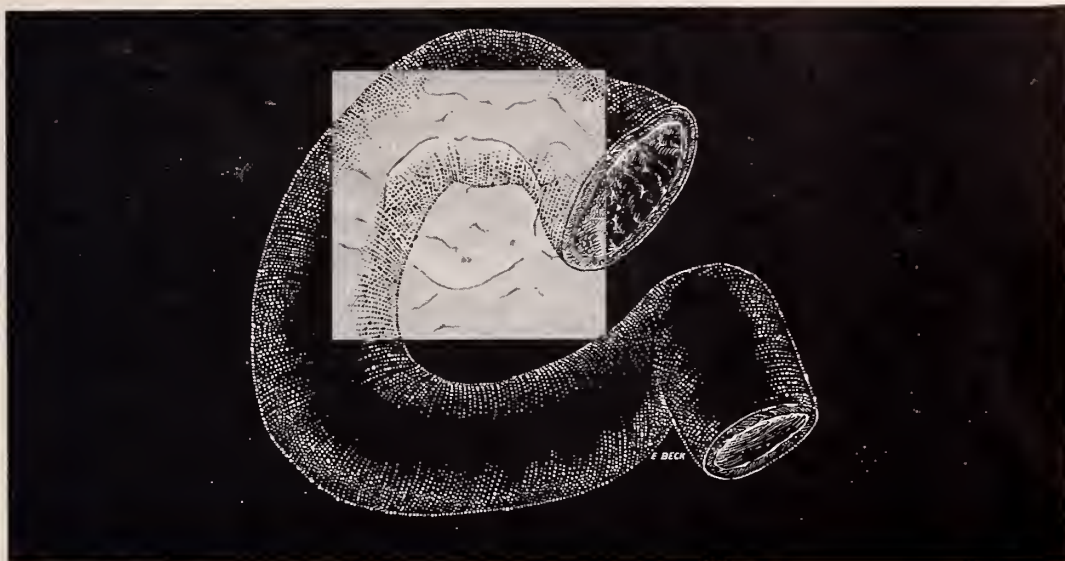
Grune & Stratton, Inc., N. Y.: The Electrocardiogram; Its Interpretation and Clinical Application, by Louis H. Sigler, M. D. (2nd edit.); Systematic Arterial Embolism; Pathogenesis and Prophylaxis, by John Martin Askey, M. D.; Peripheral Circulation in Health and Disease, by Walter Redisch, M. D., and Francisco F. Tangco, M. D.; Schizophrenia in Psychoanalytic Office Practice, 1956 Symposium; Progress in Psychotherapy, Volume II, Anxiety and Therapy, edited by Jules H. Masserman, M. D., and J. L. Moreno, M. D.; J.A.M.A. Clinical Abstracts of Diagnosis and Treatment, selected by I. Phillips Frohman, M. D.

The C. V. Mosby Co., St. Louis: Gynecologic Surgery and Urology, by Thomas L. Ball, M. D., with foreword by R. Gordon Douglas, M. D.; Pathology, edited by W. A. D. Anderson, M. D.

Philosophical Library, Inc., N. Y.: Foot Troubles, by T. T. Stamm, F.R.C.S.; Surgeons All, by Harvey Graham, M. D.

W. B. Saunders Co., Phila.: Goepp's Medical State Board Questions and Answers, by Harrison F. Flippin, M. D. (9th edit.); Clinical Proctology, by J. Peerman Nesselrod, M. D. (2nd edit.); A Manual of Pharmacology and its Applications to Therapeutics and Toxicology, by Torald Sollmann, M. D. (8th edit.); The Specialties in General Practice, edited by Russell L. Cecil, M. D., and Howard F. Conn, M. D. (2nd edit.); An Atlas of Cardiac Surgery, prepared by Jorge A. Rodriguez, M. D.; Psychosomatic Medicine, by Edward Weiss, M. D., and O. Spurgeon English, M. D. (3rd edit.)

Charles C Thomas, Publisher, Springfield, Ill.: The Pathogenesis of Coronary Occlusion, by A. D. Morgan, M. D.; Blood Pressure Sounds and Their Meanings, by John Erskine Malcolm, Wing Commander, Royal Air Force; The Physiology and Biochemistry of Lactation, by S. J. Folley, Ph.D.; Plastic Arterial Grafts, by W. Sterling Edwards, M. D.; Chemistry of Erythrocytes, by Hans Behrendt, M. D.; Psychiatry in Theory and Practice, by Beulah Chamberlain Bosselman, M. D.; Degenerative Changes in the Sternoclavicular and Acromioclavicular Joints in Various Decades, by Anthony F. DePalma, M. D.; Kaposi's Sarcoma, by Samuel M. Bluefarb, M. D.; Therapeutic Exercises for the Treatment of the Neurologically Disabled, by Harold J. Brenner, M. S.; The Placement of Adoptive Children, by J. Richard Wittenborn; Essentials of Fluid Balance, by D. A. K. Black, M. D.

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1. Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: *Am. J. M. Sc.* 232:156 (Aug.) 1956.

2. Sun, D. C. H., and Shay, H.: *Arch. Int. Med.* 97:442 (April) 1956.

3. Rafsky, H. A.; Fein, H. D.; Breslaw, L., and Rafsky, J. C.: *Gastroenterology* 27:21 (July) 1954.

4. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: *Gastroenterology* 25:416 (Nov.) 1953.

5. Silver, H. M.; Pucci, H., and Almy, T. P.: *New England J. Med.* 252:520 (March 31) 1955.

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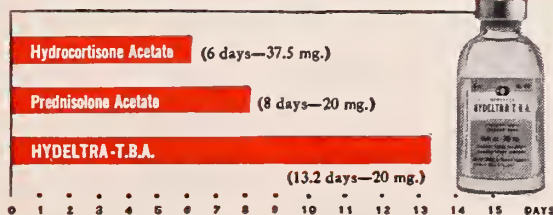
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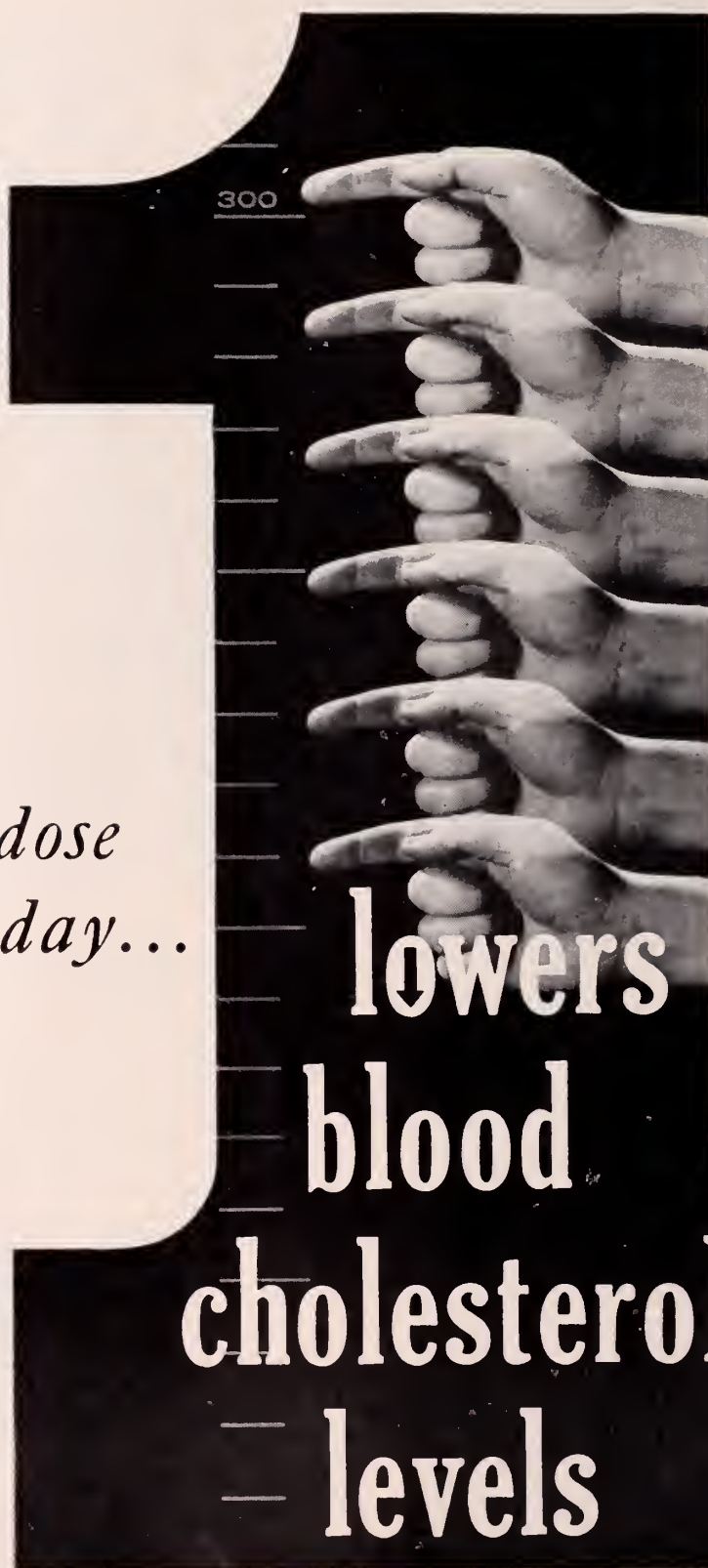
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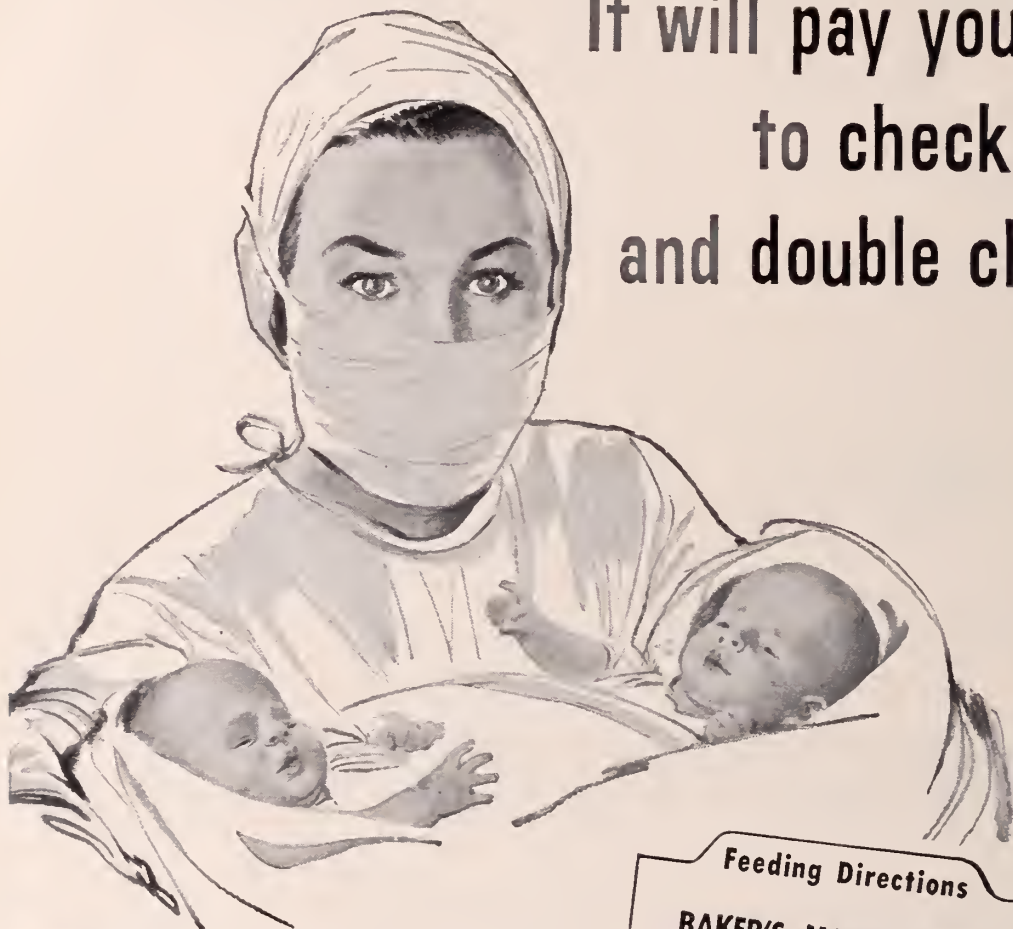
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ACHROMYCIN V Capsules are
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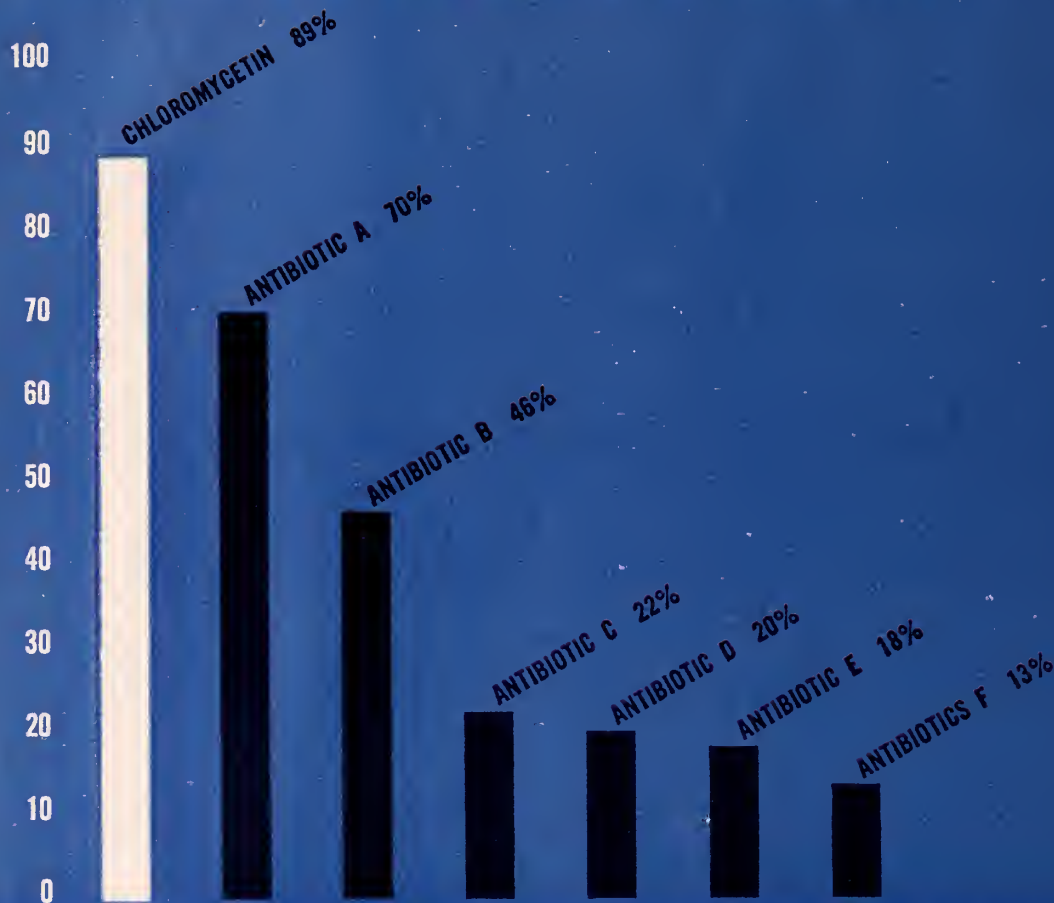
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SENSITIVITY OF 100 STRAINS OF HEMOLYTIC STAPHYLOCOCCUS AUREUS
TO CHLOROMYCETIN AND OTHER IMPORTANT ANTIBIOTIC AGENTS*



*This graph is adapted from Kempe, C. H.: *California Med.* 84:242, 1956. The single bar designated as "Antibiotics F" represents three widely used, chemically related agents grouped together by the investigator. Strains isolated January-June, 1954.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

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A REPORT ON A PROMISING CONCEPT IN ANTIMICROBIAL THERAPY: CONCURRENT ADMINISTRATION OF CHLOROMYCETIN AND GAMMA GLOBULIN

In treatment for infection, the physician is confronted with complex interactions between pathogen, antimicrobial agent and host. The pathogen represents the unselected factor, the therapeutic agent the component over which the physician exercises maximum control. But even with optimal antibiotic therapy, the eventual elimination of the infective agent and the resolution of pathologic changes depend upon efficient host response.^{1,2}

Passive transfer of antibodies through gamma globulin provides a broad antibacterial spectrum because of origin in adults exposed to a variety of microorganisms. Employed as a protective element against some of the more common contagious diseases, gamma globulin permits more competent participation by the host in the fight against established infection.

Rationale for immuno-antibiotic therapy lies in simultaneous direct attack on the pathogen and re-enforced host resistance, which implies usefulness in treatment for acute fulminating, highly refractory, or prolonged infections.

EXPERIMENTAL STUDIES ENCOURAGING

In carefully controlled studies in mice, Fisher and his colleagues in Parke-Davis Research Laboratories, using pooled human gamma globulin and Chloromycetin (chloramphenicol, Parke-Davis) concurrently, demonstrated a high degree of therapeutic effectiveness in infected animals.³ Five types of infection induced with species of *Staphylococcus aureus*, *Streptococcus pyogenes*, *Proteus vulgaris* and *Pseudomonas aeruginosa* responded to joint therapy with gamma globulin and Chloromycetin, each agent having shown at deliberately low doses in previous work little or no activity in these mouse infections when used separately. Fisher's experiences with hemolytic streptococci have been confirmed.⁴

Tests now in progress with pneumococci, salmonellae and additional strains of *pseudomonas* and *proteus* indicate that marked increases in survival rates may be anticipated in any infection where chloramphenicol has previously demonstrated therapeutic activity.³ These observations suggest that immuno-antibiotic therapy can effect cures in a variety of refractory microbial diseases.

PROMISING IN EARLY CLINICAL TRIAL

Observations analogous to those of Fisher have been reported from the clinic.⁵⁻⁷ More recently, the clinical use of gamma globulin in conjunction with antibiotics was undertaken by Waisbren⁸ on the basis of Fisher's experimental work. His series of 46 patients with systemic and localized infections due to various strains of *staphylococcus*, *pseudomonas*, *salmonella*, *proteus* and to the *pneumococcus* had failed to respond to maximum effort with conventional therapeutic measures. Marked clinical improvement in

six of these acutely ill patients shows clearly "...that in certain instances the addition of gamma globulin to antibiotic therapy may give a clinical result that could not have been obtained with the antibiotics used alone. In each of these cases, a long and extensive control period in which antibiotics were being vigorously administered had failed to produce a response but when gamma globulin was given with approximately the same dosages of antibiotic, rather marked improvements occurred."⁸

While the precise mechanism underlying the salutary effect of gamma globulin remains to be clarified, the existence of quantitative hypogammaglobulinemia was ruled out in patients in this series.⁸

A RATIONALE FOR IMMUNO-ANTIBIOTIC THERAPY

Although the relationship of susceptibility to infection and status of the host is well recognized, host resistance is an aspect of infectious disease still not understood in an era of extensive and of massive antibiotic therapy. Most antibiotics, in concentrations tolerated by living tissues, have bacteriostatic rather than bactericidal effect. In the clinic, bacteriostatic doses are most frequently given and host defense mechanisms are responsible for the eventually satisfactory clinical result.⁴

The problem of therapeutic failures despite vigorous courses of antibiotic therapy may be due to some disturbance in the immune process.⁹ In addition, disproportionately high mortality rates in the extremes of life lend support to the impression of inadequate defense mechanisms, since these are underdeveloped and immature in the very young and may be impaired or depressed in the aged.⁴

Any discussion of immuno-antibiotic treatment must at present remain largely conjectural. From preliminary evidence, however, this approach to therapy appears worthy of consideration, especially in patients in whom adequate antibiotic therapy for active infectious processes has been disappointing. While the concept of enlisting the aid of the host in combating pathogenic microbes, thereby affording the physician control of two of the three principal interacting factors, is not new, enhancement of host resistance through use of gamma globulin in treatment for microbial disease is indeed a promising one.

REFERENCES:

- (1) Swift, P. N.: *Brit. M. J.* 1:129 (Jan. 19) 1957.
- (2) Jawetz, E.: *The Forgotten Host*, *Stanford M. Bull.*, 13:84, 1955.
- (3) Fisher, M. W.: *Antibiotics & Chemother.* 7:315, 1957.
- (4) Welch, H.: *The Host and the Parasite. A New Clinical Approach to Biologic Relationships*, *Antibiotics & Chemother.* 7:271, 1957.
- (5) De, S. P., & Basu, U. P.: *Brit. M. J.* 2:564, 1938.
- (6) Goldberg, S. L., & Bloomenthal, E. D.: *Surgery* 9:508, 1941.
- (7) Carnes, H. E.; Gajewski, J. E.; Brown, P. N., & Conlin, J. H., in Welch, H., and Marti-Ibanez, E., ed.: *Antibiotics Annual*, 1954-1955, New York, Medical Encyclopedia, Inc., 1955, p. 391.
- (8) Waisbren, B. A.: *Antibiotics & Chemother.* 7:322, 1957.
- (9) Harris, R., Jr., & Schick, B.: *J. Mt. Sinai Hosp.* 21:148, 1954.

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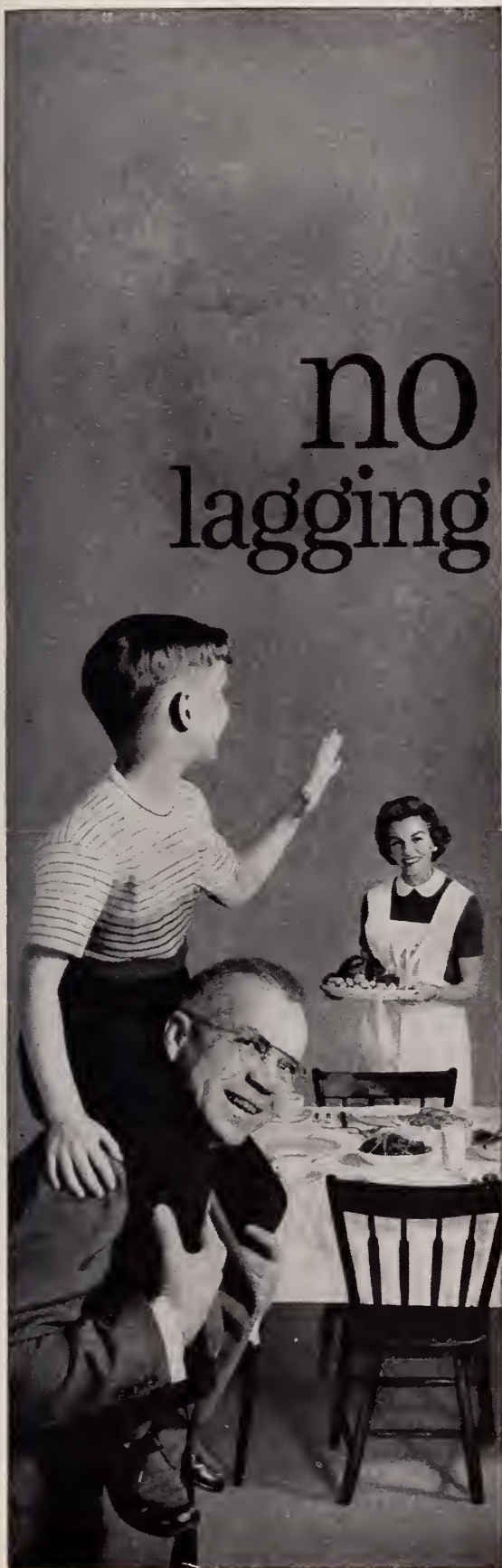


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*Each INCREMIN Tablet
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l-Lysine 300 mg.
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(INCREMIN Drops contain 1% alcohol)

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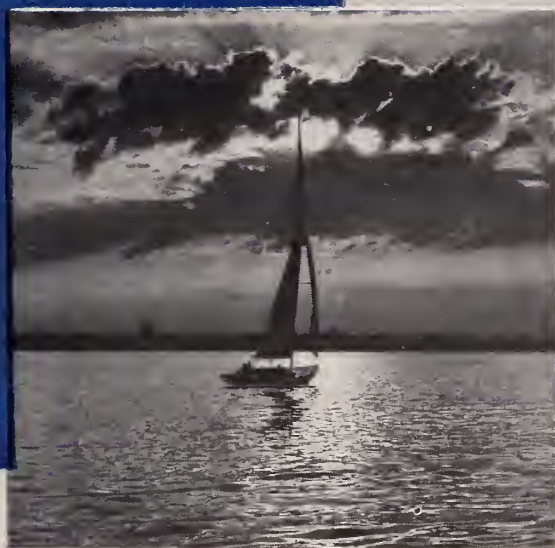
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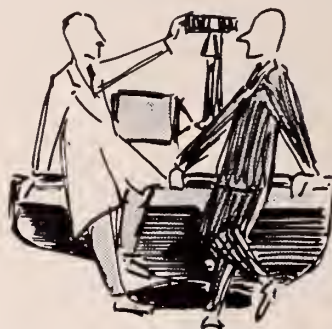
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1. Proudfit, P. T., and Robinson, C. H.: Nutrition and Diet Therapy, ed. 11, New York, The Macmillan Company, 1955, pp. 314-320.
2. Harper, A. E.: Amino Acid Imbalance, Toxicities and Antagonisms, Nutrition Rev. 14:225 (Aug.) 1956.
3. Amino Acid Requirements of Adult Man, Nutrition Rev. 14:232 (Aug.) 1956.
4. Amino Acid Imbalance and Supplementation, Editorial, J.A.M.A. 167:884 (June 30) 1956. Council on Foods and Nutrition, American Medical Association: Importance of Amino Acid Balance in Nutrition, J.A.M.A. 158:655 (June 25) 1955.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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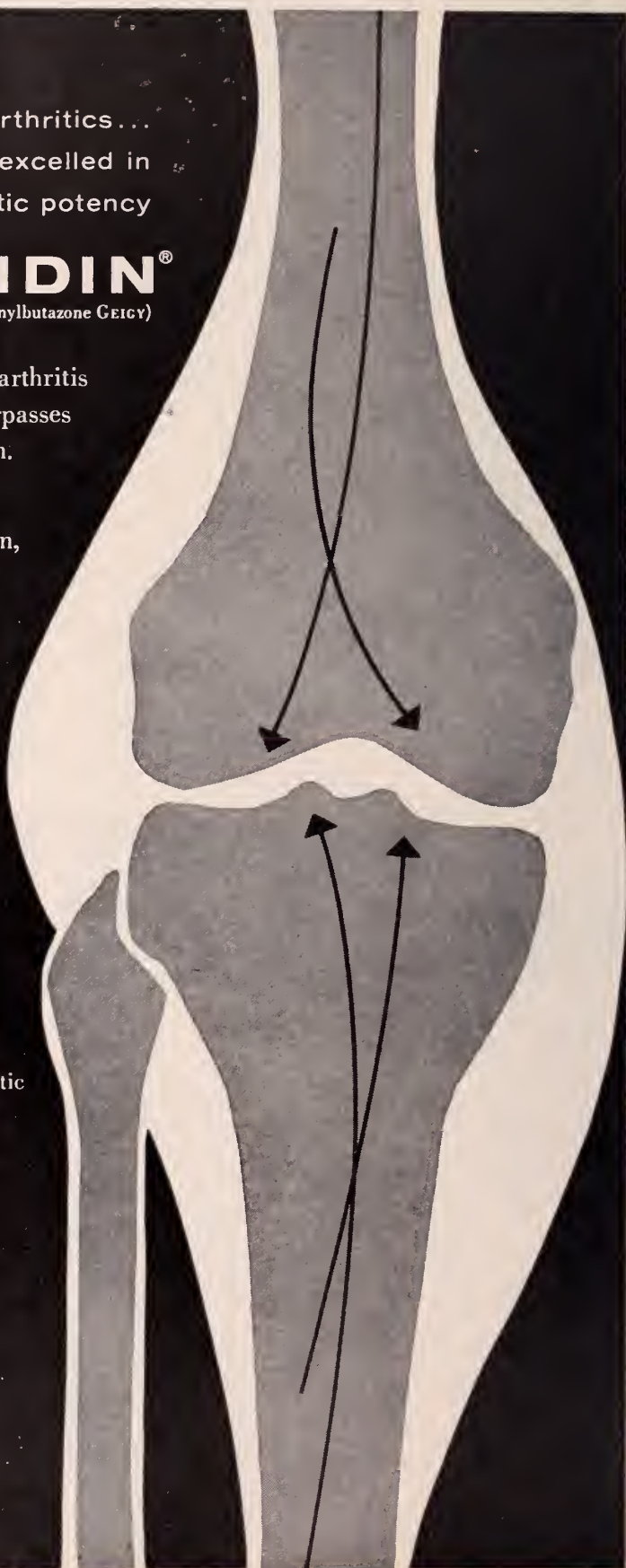
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1. Locket, S.: Brit. M.J.
1:809 (Apr. 2) 1955.

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2. Wright, W.T., Jr., et al.: J. Kansas
M. Soc. 57:410 (July) 1956.

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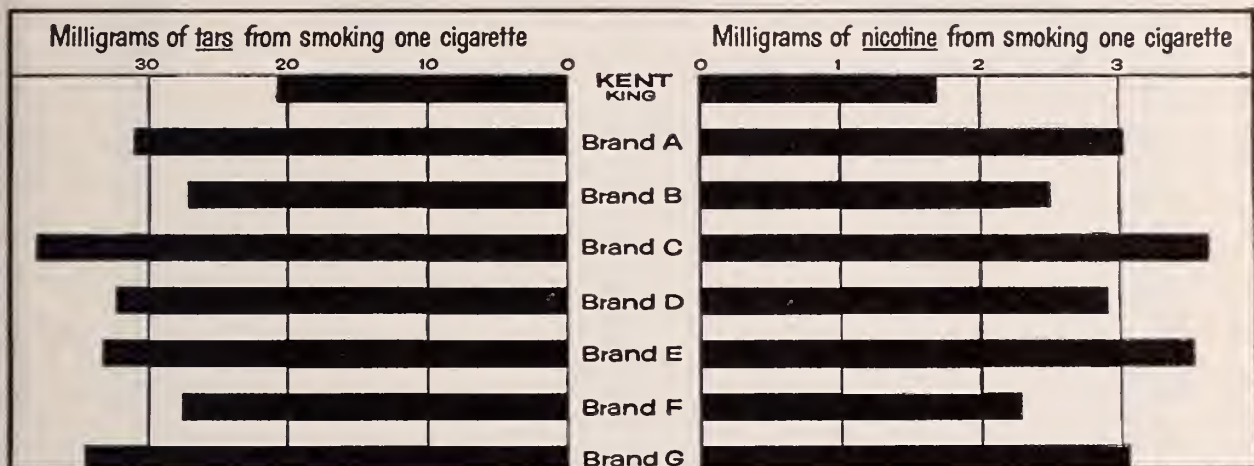
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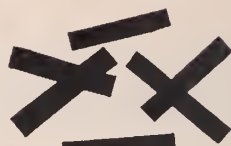




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*Ferguson, J. T., and Linn, F. V. Z.: Antibiotic Med. & Clin. Therapy 3:329, 1956.



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2	625		
3	675		
4	725	110	50
5	750		
6	800		
7	825	100	45
8	850		
9	875		
10	900	95	43
11	950		
12	1000		
24	1200	90	40



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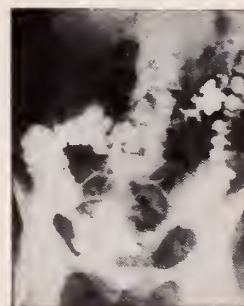
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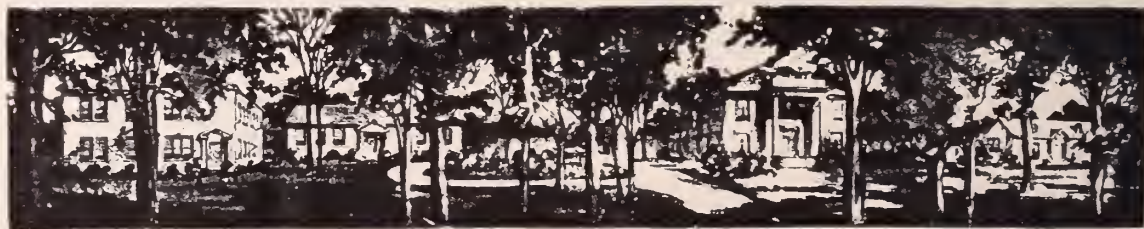
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September 13 & 14, 1957

Friday, September 13, 1957

MORNING SESSION

9:00 - 9:30

Opening Ceremonies

9:30 - 10:00

"Pitfalls in the Early Diagnosis of Gynecological Malignancies"

Milton L. McCall, M. D.—Chairman, Department of OB-Gyn, L.S.U. School of Medicine, New Orleans, Louisiana

10:00 - 10:30

"Outpatient Management of Hypertension"

John Moyer, M. D.—Chairman, Department of Medicine, Hahnemann Medical College, Philadelphia, Pennsylvania

10:30 - 10:45

Visit Exhibits

10:45 - 11:15

"Anxiety Heart Disease"

Don Chapman, M. D.—Professor of Medicine, Baylor University, Houston, Texas

11:15 - 11:45

"Common Duct Stone"

Robert M. Moore, M. D.—Chairman, Department of Surgery, University of Texas, Medical Branch, Galveston, Texas

12:30 - 2:00

Round Table Luncheons

AFTERNOON SESSION

2:00 - 2:30

"Rhologic Diagnosis—Present Status"

Ralph Riggs, M. D.—Department of ENT, Confederate Memorial Medical Center, Shreveport, Louisiana

2:30 - 3:00

"The Interpretation of Chest Films in Pediatrics"

Vincent P. Collins, M. D.—Professor of Radiology, Baylor University College of Medicine, Houston, Texas

3:00 - 3:30

"The Practical Diagnoses of Bleeding Disorders"

Jack Abbott, M. D.—Pathologist and Director of Laboratories, Methodist Hospital and Baylor University College of Medicine, Houston, Texas

3:30 - 3:45

Visit Exhibits

3:45 - 5:00

Medical and Surgical CPC's

Saturday, September 14, 1957

MORNING SESSION

9:00 - 9:15

Visit Exhibits

9:15 - 9:45

"Splenectomy"

Robert M. Moore, M. D.

9:45 - 10:15

"The Importance of Geriatric Gynecology"

Milton L. McCall, M. D.

10:15 - 10:45

"The Role of Surgery in Heart Disease as Seen by a Cardiologist"

Don Chapman, M. D.

10:45 - 11:00

Visit Exhibits

11:00 - 12:00

Panel Discussion

"Diagnosis and Management of Thyroid Diseases"

Moderator: Don Chapman, M. D.

Panelists: John Moyer, M. D., Jack Abbott, M. D., Vincent P. Collins, M. D., Robert M. Moore, M. D.

12:30 - 2:00

Round Table Luncheons

AFTERNOON SESSION

2:00 - 2:30

"The Practical Approach to Everyday Urology Problems"

Robert K. Womack, M. D.—Head of Department of Urology, Confederate Memorial Medical Center, Shreveport, Louisiana

2:00 - 3:00

"Laboratory Aids in the Diagnosis of Endocrine Disorders"

Jack Abbott, M. D.

3:00 - 3:15

Visit Exhibits

3:00 - 3:45

"Ataractic Agents, Their Use in Clinical Medicine and Comparison with Standard Neuro-sedatives"

John Moyer, M. D.

3:45 - 4:15

"The Role of Radiotherapy in the Treatment of Breast Cancer"

Vincent P. Collins, M. D.

4:15 - 4:45

"Symptoms and Treatment of Nasopharyngeal Disease"

Ralph Riggs, M. D.

7:30

Cocktails and Dinner Dance

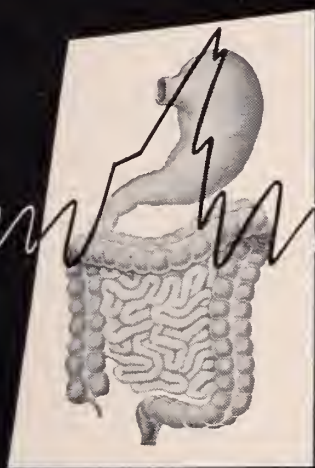
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"In occupational cancer, however, there may be a lapse of ten, twenty or more years between the exposure and the cancer. This, of course, makes it very difficult to recognize the causes of the cancer, since in the ten or twenty years workers may have been exposed to many different materials. . . .

"Perhaps the most exciting aspect of occupational cancer is the fact that once the nature of the carcinogenic materials is understood, and the nature of the exposure has been learned, it should be possible to develop ways of eliminating or minimizing the exposures and thus preventing the cancers. The approach developed by Standard Oil Company (New Jersey) and its affiliates to the problem, would probably interest others concerned with the development of programs to prevent occupational cancer."

The article, "Research in Occupational Cancer Control", which appears in "CA: A Bulletin of Cancer Progress", May 1957, published by the American Cancer Society, outlines what seems to be a reasonable program for prevention or early recognition of Occupational Cancer.

* Synthesized from conferences among Ralph F. Schneider, M.D., Medical Director, Standard Oil Company (New Jersey); Leo J. Wade, M.D., Medical Director, Esso Standard Oil Company; and Robert E. Eckardt, M.D., Ph.D., Director Medical Research Division, Esso Research and Engineering Company, Linden, New Jersey.



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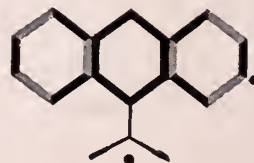
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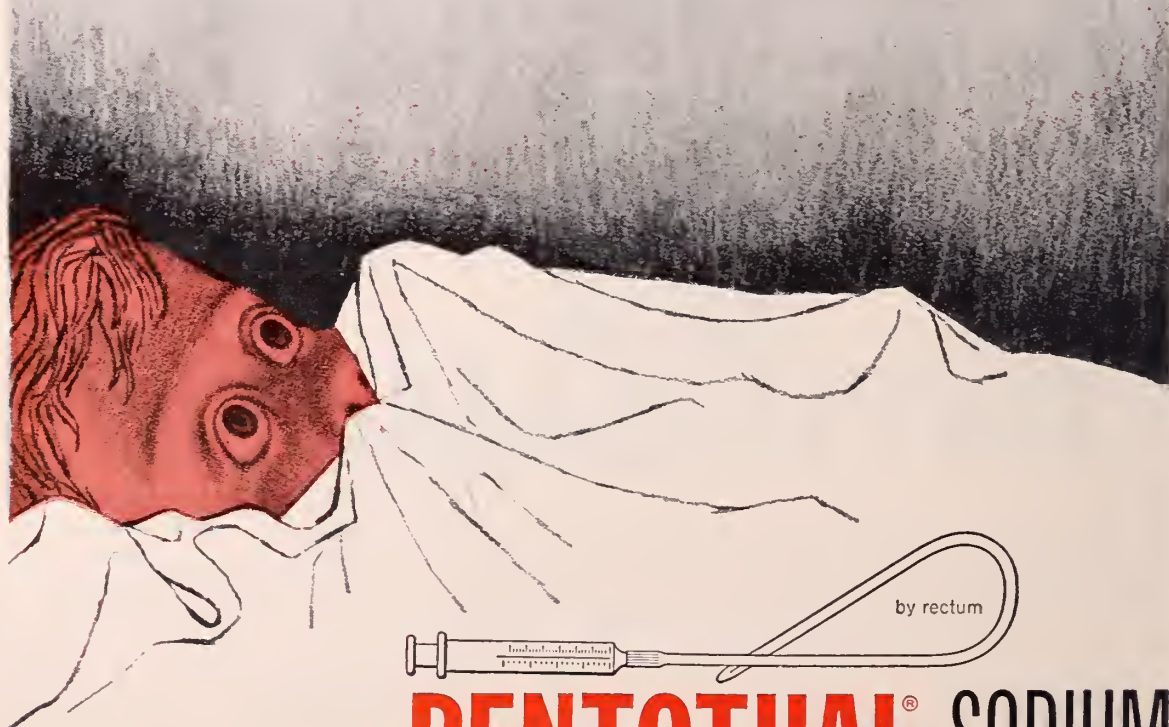
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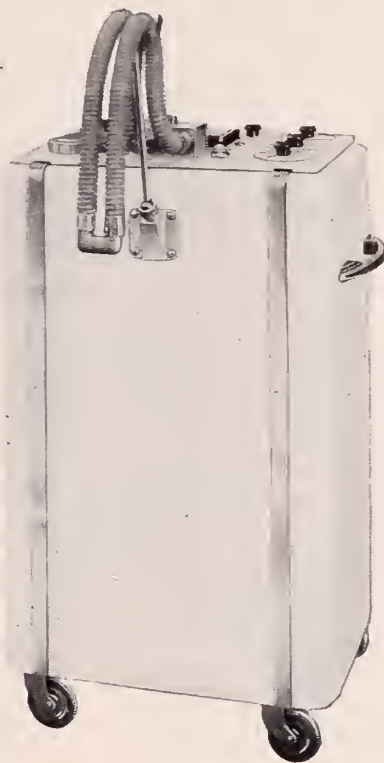


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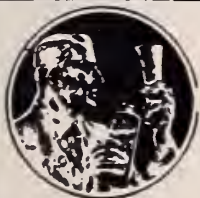
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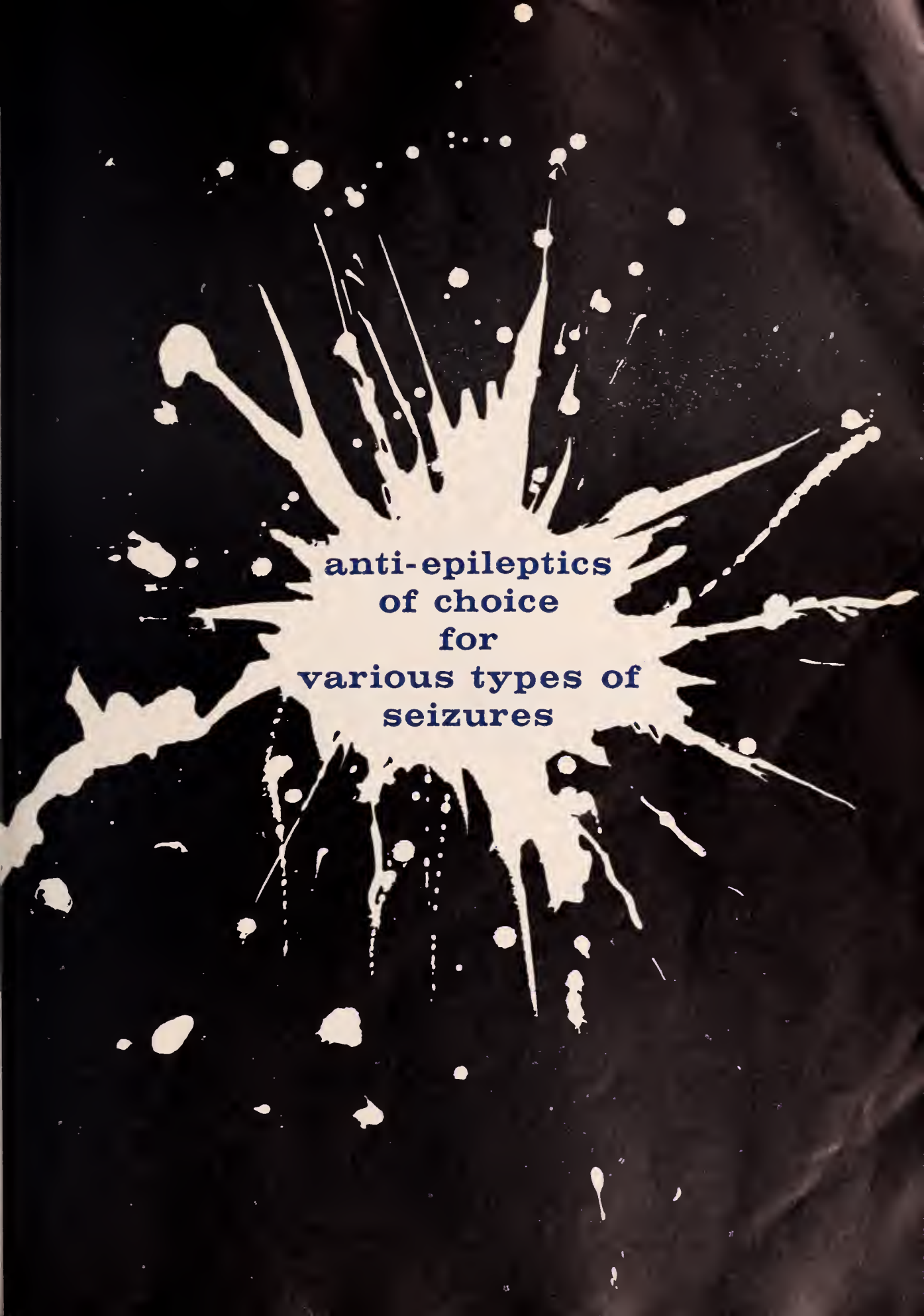
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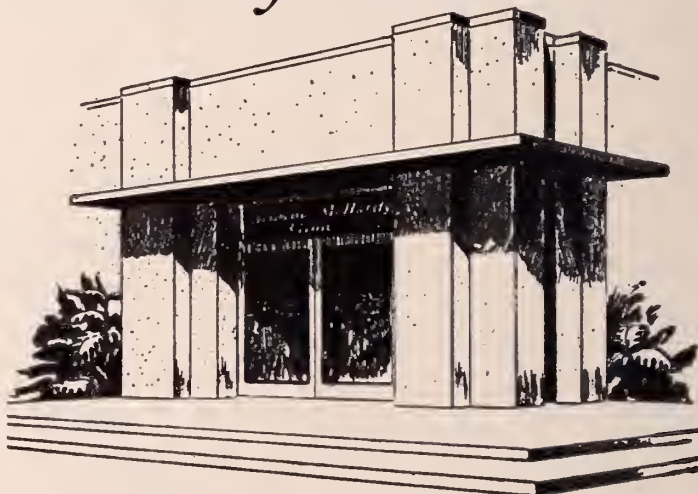
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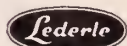
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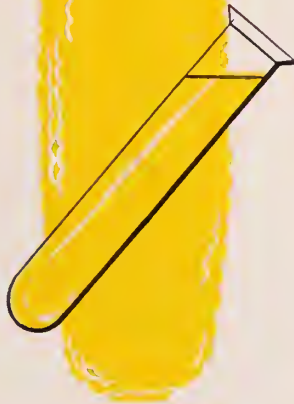
1. Hodges, F. T.: GP, 14:86, Nov., 1956.
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Fat	Fatty Acids as Percentage of Total Acids								Iodine Value		
	Saturated		Oleic		Linoleic		Linolenic				Arachidonic Ave.
	Ave.	Range	Ave.	Range	Ave.	Range	Ave.	Range			
Butter	—	46-48	—	—	4.0	—	1.2	—	0.2	—	26-42
Coconut oil	—	75-88	—	5-8	—	1.0-2.5	—	—	—	—	7-10
Corn oil	13	11-15	—	23-40	56	46-66	—	0.0-0.6	—	126	113-131
Cottonseed oil	26	21-30	27	22-36	47	34-57	—	—	—	105	90-117
Lard	43	—	46	—	10	15.6	0.5	—	0.5 (2.1)	—	53-77
Linseed oil	—	6-12	—	13-31	—	10-27	—	30-64	—	—	170-204
Margarine	23	15-23	62	59-77	5.8	5-11	—	0.1-0.9	0	81	74-85
Olive oil	—	8-16	—	53-86	—	4-20	—	—	—	—	80-88
Peanut oil	17	14-22	54	44-65	29	20-37	—	—	—	98	90-102
Shortening	25	17-45	62	43-79	5	3-12	—	0.2-0.6	0-0.5	78	59-80
Soybean oil	15	11-18	25	18-58	55	28-62	5.1	0.3-10	—	130	100-143
Tallow (beef)	53	—	42	—	4	5.3	0.5	—	0.5	—	40-48

Iodine numbers are an accepted measure of the degree of unsaturation of vegetable oils.

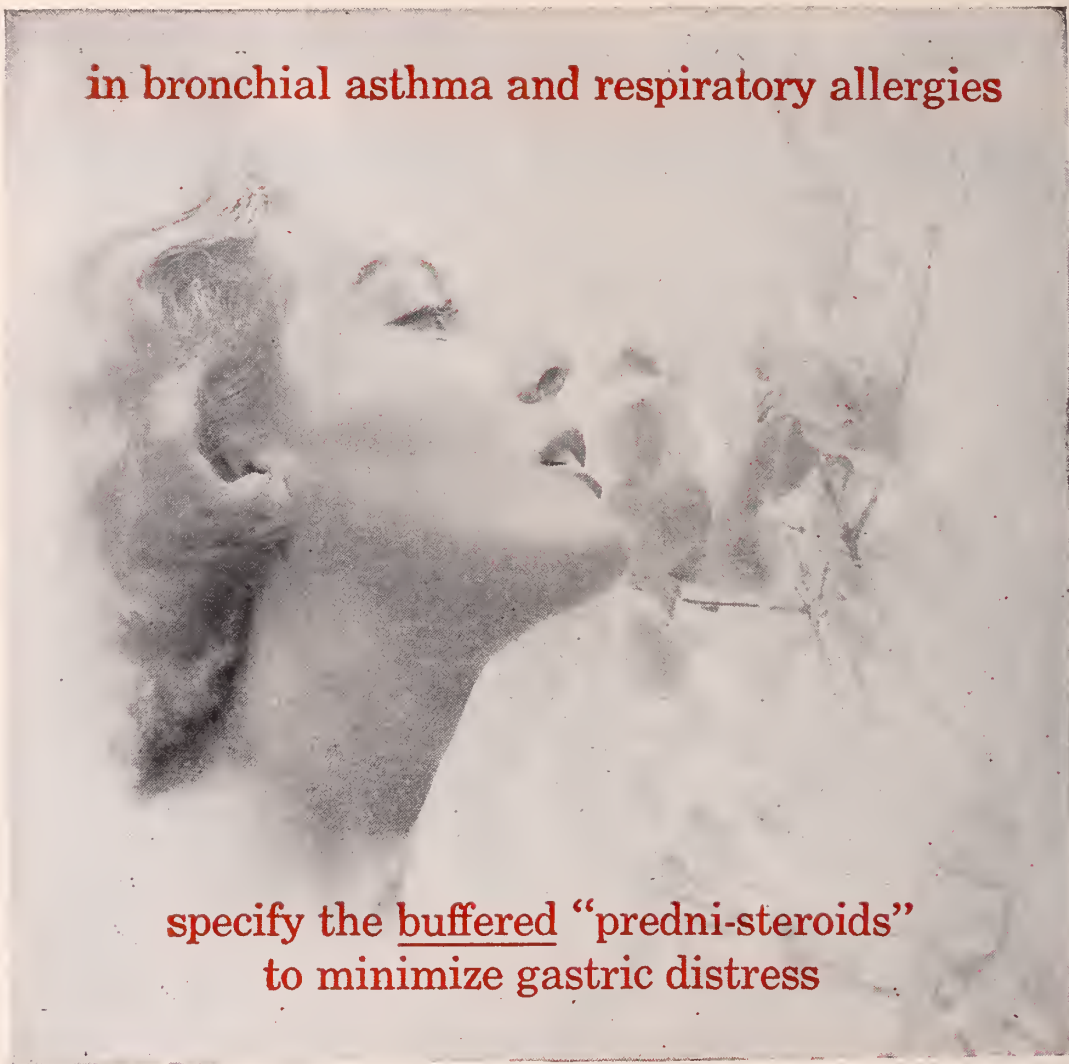
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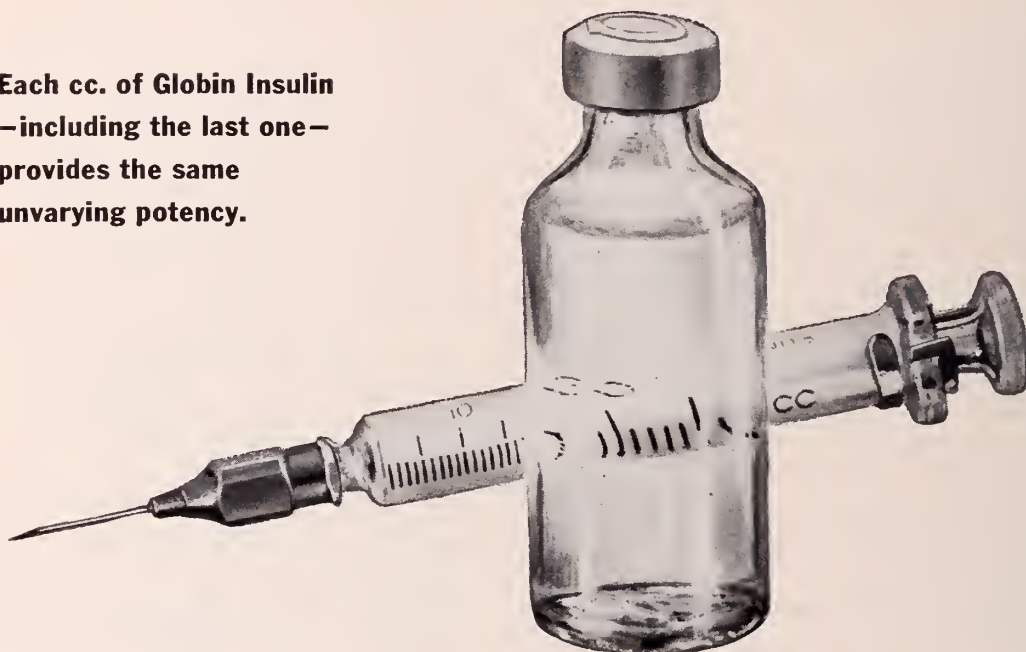
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The Journal

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HISTORY OF CONCEPTIONS OF ETIOLOGY AND THERAPY OF DIABETES MELLITUS, PAST AND PRESENT *

A. A. HEROLD, M. D.
SHREVEPORT

It may seem to many of you that such a title will be dull and useless, but to me and others interested in this subject, past ideas of causation and treatment of this disease are fraught with much of interest—interesting because of changes in theories and also of indications for treatment and how we may avoid those dreaded complications which arise through improper or insufficient treatment or neglect.

As Chairman of this section, I feel that much is in order to be said, much prophesying may be done and, in this review, we find where ideas change and often revert to former thoughts.

In a paper read by me before the American College of Physicians in 1928, I traced the ideas of etiology from the classical experiments of Claude Bernard, during which he demonstrated the famous "piqûre" or puncture of the tip of the calamus scriptorius in the fourth ventricle, causing glycosuria, with depletion of liver-stored glycogen, which may be designated as the starting point of thinkers, searching for rational diabetic therapy. I referred, also, to the work of Conrad Brun-

ner, in 1682, when he attempted total pancreatectomy on dogs, and to the successful experiments of Von Mering and Minkowski, two hundred and seven years later. And I mentioned, also, the oral substitutes at that time and which I shall refer to later in this paper.

THERAPY

A paper of this scope would not be complete without reference to past therapy and a summary of the ideas of the best clinicians as to the merits or demerits of the various preparations advocated in the treatment of this disease, which has been recognized as a clinical entity since the days of the famous Egyptian Papyrus Ebers of approximately 1,500 B.C.

It is interesting to note the many therapeutic measures and drugs which have been recommended and used to reduce hyperglycemia or to clear up, in part at least, glycosuria. For centuries, in some parts of Hungary, the peasants have known that a decoction or tea of certain blueberry leaves helps the polyuric. On this information, Dr. F. M. Allen, in cooperation with his chemist, has experimented with the preparation, which he has named myrtillin and which was placed on the market. While no extravagant claims have been made for it, it has been found to be of some value in preventing the rise of a normal blood sugar. Along similar lines, Dr. E. A. Bertucci has reported definite lowering of hyperglycemia with a preparation made from the thistle.

* Presented at the Seventy-seventh Annual Meeting of the Louisiana State Medical Society, New Orleans, May 7, 1957.

For many years, there has been a tablet of yeast on the American market and much has been claimed for it. I recall an associate, with whom I officed in the early days of my practice, himself a diabetic, who claimed to have noted beneficial effects from it, both personally and in his practice. A few years ago, German manufacturers flooded the market with many such preparations, but they do not seem to have made an impression. However, Joslin, in his book on treatment, mentions that "a substance similar to insulin has been prepared from yeast by Winter and Smith and from various vegetable sources by Collip." Prof. von Noorden, in his lectures delivered in this country, in 1905, stated:

"About fifteen years ago Prof. Binz and Dr. Graser discovered that the fruit of the East Indian plant, *Syzygium jambolanum*, possesses the property of strongly reducing phloridzin diabetes. . . . I have, myself, employed and studied the effect of jambul preparations on cases of severe and slight diabetes; the results showed that, in some cases, a marked effect on the glycosuria was, without doubt, actually obtained."

It may be mentioned as of historical interest that von Noorden mentions as the drugs most potent in diabetes, as considered in 1905, opium and its alkaloids, salicylic acid and similar substances (including aspirin) and antipyrin. Joslin, also, in an early work, while deprecating the too ready use of drugs by the profession, mentions opium and aspirin and concludes:

"Organic preparations made from the pancreas and the pancreatic gland, itself, have been frequently employed, but *thus far (mark the words)* the data do not appear to me to warrant a continuance of their use. . . ."

Does it not seem from this that he had a premonition of the oncoming of insulin?

Numerous glandular or pseudoglandular preparations have been marketed with the claim that, as they contain the extract of the islet tissue, as well as (or without) the rest of the pancreas, they will supply what the diabetic lacks if properly taken.

An enteric coated tablet has been marketed which is certainly more rational, but, if any of these have helped, except in that they supply what may be lacking in enzymatic secretion of the gland, it has not been proved; a few clinicians think that they have seen some benefit from these preparations when used as an adjunct to insulin therapy.

About thirty years ago, German investigators brought out several preparations which they thought would prove to be an oral hypoglycemic preparation of value, notably synthalin, neo-synthalin and glukhorment. In fact, so well were they received that Prof. Frank, of Breslau, under whose supervision synthalin was first produced, received the Nobel prize in medicine, in 1927, for his work along this line. Although there has been reported some similarity in effects of synthalin and glukhorment, in that the lowering of blood sugar with them is due to the guanidine or guanidine derivative contained therein, my personal experience is limited to the first-named preparation. My information is that neosynthalin, intended to be an improvement on the original product, in that it is less toxic, has turned out to be much less effective. The objection to the use of synthalin has been that, if continued over a long period of time, serious gastrointestinal disturbance might be produced. It is partly on this account and partly because of difficulty in obtaining it at that time that I did not use it more often. In my limited experience no gastrointestinal irritation was observed.

As to diet, briefly, I would like to state that the pre-insulin treatment of "gradual starvation treatment" of Allen in this country and Guelpa in Italy produced the best results in severe complicated cases, while Newburgh and Marsh in Ann Arbor were advocating high fat diets with less protein, in spite of danger of acidosis. Of course, diets have undergone drastic

changes since the advent of insulin, except for lowering calories for overweights.

The so-called "Banting era" (Joslin) was preceded by notable preliminary work by von Mering and Minkowski in Germany, Allen, Barron and others in this country before the assiduous work of Banting, assisted by Best and encouraged by McLeod and Collip in Canada brought forth the present boon to diabetics and revision of our therapy of diabetes. Today, we have the regular, unmodified insulin, zinc insulin crystals, NPH and PZI and Globin modifications, not to mention the latest advance in the three degrees of Lente insulin. There is some question as to whether or not the protamine in NPH and PZI might be harmful, from long continued use, in fostering advance of arteriosclerosis; to this question, I have been unable to get a satisfactory answer from manufacturers.

ORAL PREPARATIONS

Now, it has often been said "There is nothing new under the sun"! Following the steps of Frank and others in Germany, the fellow-countrymen there have been still working on an oral preparation to replace insulin and they claim great benefits from sulphonamide derivatives, of which we have been trying Carbutamide (BZ 55) and Tolbutamide (Orinase) in this country. Dr. Herold, Jr. and I have had extensive experience with both these products and I would like to report that we have had excellent results from the former and moderately satisfactory use of the latter. However, due to the fact that we have had some unfavorable side effects from Carbutamide and a number of such reported to Eli Lilly & Co., who produce this, causing them to suspend clinical trials with it, we have all but abandoned this and are using Tolbutamide practically altogether now. However, we still have some patients (I have two) who insist upon continuing to be supplied with BZ-55 and, when we let them have it, we caution them that they are using it at their own risk. Some of my cases, at present, with care as to diet, are getting

along very nicely with the Orinase tablets and without insulin; others are still taking insulin, but have been able to reduce the dosage considerably.

As to how these preparations act, there has been no clear explanation, but it must be either (1) by stimulating the endogenous secretion of the Beta cells of the pancreas, or (2) by depressing the action of the Alpha cells, which secrete glucagon, the insulin antagonist, or (3) by depressing the glycogenic function of the liver, thereby lessening the glucose production in the body. Whether or not the mode of action will work permanent harm to the body remains to be seen.

Despite the ever-busy Germans, attempting to get us a substitute for insulin, the organic extract is still the standby, generally speaking, in diabetes, especially in complications. There are several things, relative to these tablets, to be worked out, just as the mode of insulin action has never been fully explained; nor has the percentage of storage of glycogen in muscles and other tissues been thoroughly ascertained. Soskin's work on importance of liver function in diabetes should be emphasized.

I shall close by quoting a conclusion in a paper read by me before the Southern Medical Association in 1936:

"I venture the prediction that not until we have found how to control the glycogenic function of the liver and, in addition, perhaps, how to regulate the natural secretion of insulin, will we have reached Utopia in diabetic therapy."

DISCUSSION

Dr. Frank W. Pickell (Baton Rouge): I certainly enjoyed this paper and congratulate Dr. Herold on his scholarly presentation.

Some months ago, I read one of Dr. Herold's earlier papers, written in the late twenties, mainly concerned with juvenile diabetes. His ideas of etiology and management were practically what they are today with the exception that we have better insulin today.

I am sure that his ideas then were considered somewhat radical but today, they are the commonplace. I think, Dr. Herold is not only a historian of diabetes, but also a prophet and his paper today, again looks into the future. I think papers like these really help us.

DIABETES COMPLICATED BY SURGERY *

DANIEL W. HAYES, M. D.†
NEW ORLEANS

Bad risk—acidosis, coma, insulin shock, electrolyte problems, anesthesia reactions, wound infection, delayed healing are among the bleak thoughts which may flash through the mind of the surgeon suddenly confronted with a diabetic patient upon whom he may have to operate. These problems were commonplace prior to insulin use, but there has been an extraordinary reversal of the morbidity and mortality statistics in the past ten years. In that time, there has been a decrease in the mortality of 12 per cent or more to a mortality rate almost that of the general population. Therefore, we now withhold surgery from no one just because of diabetes.¹

DIAGNOSIS OF DIABETES

Initially, let us spend a moment on the diagnosis of diabetes. It should be emphasized that the triad of polydipsia, polyuria, and polyphagia associated with loss of weight will not be present in many undiagnosed diabetics, nor will a urine specimen be positive for sugar in all diabetics preoperatively. Remember the high renal threshold for sugar, often 200 mgm. per cent or more, that exists in the elderly, nephrosclerotic patient. A preoperative blood sugar may be life-saving in such a case. It is never easy to diagnose postoperatively in a stuporous patient receiving intravenous glucose. Under stress of an acute infection or trauma, some "prediabetics" will have hyperglycemia and glycosuria. If the surgeon is always aware of the fact one out of 80 persons is a diabetic some needless morbidity and perhaps mortality could be avoided by careful preoperative examinations of all patients, especially the patients who are obese, or women with pruritus, or people with ar-

teriosclerotic changes at an early age, or those patients with diabetic relatives.

PREOPERATIVE PREPARATION

If the patient is a diabetic, what then? If the surgery is elective, it is advisable to postpone the operation and allow adequate time for evaluation and preparation of the patient. This time varies from a few days to several weeks. The risk is increased in the presence of obesity, cardiovascular renal disease, and of course, in patients with poor control of diabetes. During this observation period, he should be brought into metabolic balance, not only for sugar but also for proteins, fats and electrolytes, by regulation of diet and adjustment of insulin dosage and type if necessary. Long-acting insulin, such as protamine zinc, should always be discontinued and an intermediate insulin, such as NPH or Lente, be substituted, since there is much difficulty with the day-to-day adjustment of PZI because of a two and a half to three day overlap of dosage, and nocturnal hypoglycemia is frequent at high dosage levels. Attention should be paid to protein and nitrogen balance, an important factor in wound healing. A new diabetic patient particularly should be placed in positive nitrogen balance. The fasting blood sugar ideally should be brought to a level between 120 to 150 mgm. per cent. Electrolytes usually are already in balance unless keto-acidosis is present, but must be checked. The vascular state of the patient must be evaluated. Since arteriosclerosis is a complication that appears early in the diabetic's life, all but the youngest should have electrocardiograms made preoperatively. Peripheral pulses must be palpated routinely, and a written record be made of the findings. Because of some increased susceptibility to tuberculosis, all diabetics should have chest x-rays done routinely before operation.

PREANESTHETIC MEDICATION

Preanesthetic medication deserves only a brief comment in that diabetics may take the same preoperative sedation indicated for the age and vascular state of

* Presented at the Seventy-seventh Annual Meeting of the Louisiana State Medical Society, May 7, 1957, New Orleans.

† Section of Medicine, Mahorner Clinic. Clinical Instructor in Medicine at Louisiana State University School of Medicine.

any patient. It is wise not to oversedate the patient, since the subsequent respiratory depression may lead to hypoxia, especially in the elderly.

CHOICE OF ANESTHESIA

The choice of anesthesia is a somewhat more important consideration.^{1, 3, 4} The anesthetic which is the safest is the one which interferes least with the hormonal mechanisms. In this regard, it is felt that ether is contraindicated because of its sympathicomimetic actions, causing hyperglycemia in addition to its usual tendency to cause nausea and vomiting. Cyclo-propane has little or no adverse effect on diabetics, nor does ethylene. However, in all possible cases, local, spinal or caudal anesthetics should be used. Intravenous pentothal is also well tolerated, though if the liver is diseased, the use of this anesthetic agent may be unwise.

EMERGENCY SURGERY

If emergency surgery is unavoidable, operation need not be delayed for merely the presence of hyperglycemia and glycosuria, but if acidosis is present several hours delay may mean a successful operation and a live patient. In this regard, one must recall Zachary Cope's admonition that "impending coma may cause a misdiagnosis of acute inflammation within the abdomen."² During these few hours serum electrolytes and sugar are always determined at the moment the patient is first seen. Crystalline insulin is given, often giving half of the dose intravenously and the other half subcutaneously. The initial dose varies as to the severity of the acidosis and the hyperglycemia. If it can be determined how long the patient has been ill and to what extent he has been out of control, the problem of dose will be easier. Forty to fifty units of crystalline (or regular) insulin initially will reduce the blood sugar considerably in three to five hours. In that time, the results of the chemistry studies will be available, and more insulin can be given if necessary. If the acidosis is mild and the patient is clinically not in a severe state a smaller dose of 15 to 20 units

subcutaneously is advisable. Saline and electrolyte solutions are administered to rehydrate the patient. Blood is given as indicated, as are antibiotics.

If surgery is to be done in an acidotic patient without delay, as in certain traumatic and other life-saving procedures, one needs to give crystalline insulin in dosage ranging between 20 and 40 units intravenously initially to insure absorption, if the patient is severely ill. The insulin should NOT be mixed with other fluids in the flask. Five per cent glucose with saline is given during the surgery. When the patient is in the recovery room and thereafter, regular and frequent observation can be carried out with the administration of insulin, fluids, and electrolytes as indicated.

ELECTIVE SURGICAL MANAGEMENT

Diabetics going to surgery as scheduled cases should be the first early morning case, and a plea is made to surgeons and operating room personnel to make this priority a rule in handling such cases. Not only is the feeding problem made much easier, but postoperative blood sugars may be made by the regular laboratory technicians, and thus will be more accurate in most cases.

Hypoglycemia with its dangers, and ketosis with its serious implications, are to be avoided during and after surgery. Glycosuria and hyperglycemia are to be expected postoperatively. Therefore, the insulin dose preoperatively is to be determined with these factors in mind. A blood sugar should be drawn in every case before surgery.

The problem of insulin dosage may be handled in two different ways, the choice depending on the habits of the clinician and the severity of the diabetes. Insulin is omitted preoperatively completely by some, who prefer to control the patient entirely with crystalline insulin at stated intervals. This should always be the case in patients taking 20 units or less each day and, of course, those patients taking PZI should have been changed to an intermediate form, NPH, Globin or Lente, at

least three days prior to surgery. During surgery, 5 per cent glucose in water is used, and a small amount of crystalline insulin, usually about 15 units, is given subcutaneously or into the tubing for each 1000 cc. of fluid used. This is less than the usual amount needed to "cover" the 50 gm. of glucose administered. Never should insulin be added to and mixed in the flask, for its effect will be long delayed and almost worthless, as it drips in unit by unit. Rather it should be given all at once, for its effect in any case is not fully developed until three to six hours later.

Another way of handling this problem is to give half of the usual dose of the intermediate-acting insulin on call to surgery, then adding no additional crystalline insulin at any time during the operation, until at least twelve hours later. Five per cent glucose in water is administered during and after surgery.

POSTOPERATIVE DIABETIC CARE

Postoperatively in either case, the patient is observed and handled according to Woodyatt's six-hour management program. Electrolytes, combined with the glucose solutions and blood, are given as indicated and the problem is no different than in the nondiabetic patient. Blood sugars are often advisable late in the afternoon after surgery, and should be obtained routinely each morning thereafter, until the patient is well controlled.

The six-hour management program is based on the timing of crystalline insulin, so that there is peak effect of the insulin between four and six hours, with little overlapping of dose. It is a twenty-four hour control of the patient, not merely a daytime sixteen-hour schedule. Intravenous feedings are given at a rate of about 40 to 50 drops per minute, or 800 cc. in each six-hour period, so in twenty-four hours, 3,200 cc. of fluids may be given. Urine tests for sugar and acetone are obtained every six hours, or more often if desired. Crystalline insulin is administered subcutaneously (never in the flask) every six hours depending on the reaction

of the urine for sugar. Usually, the ideal reaction is maintained at about 2 plus ($\frac{3}{4}$ per cent) with a negative acetone test. If the urine becomes negative for sugar in the presence of adequate renal function, the insulin should be omitted entirely, since the danger of hypoglycemia is severe. If the urine reaction shows 4 plus glycosuria, give 20 units of crystalline insulin; if 3 plus give 15 units; if 2 plus give 10 units; and if 1 plus or a trace give 5 units. Blood sugars of 180 to 200 mg. per cent after surgery are satisfactory. This successful program of six-hour management should be continued until the patient is able to take normal oral nutrition.

For the patient who can eat postoperatively without nausea or vomiting, this will obviously be the ideal method of nutrition. Late afternoon feedings of small amounts of oral liquids, including tea, coffee, orange juice, ginger ale, gruel and thin oatmeal are given. Six-hour management then need not be continued longer, if the patient is able to eat soft foods and a full caloric program of diet can be planned with only one morning dose of intermediate insulin. Thereafter, urine sugar and acetone are estimated on a "q.i.d.", a.c., and bedtime basis.

SUMMARY

Accurate diagnosis of the unknown diabetic and meticulous care of the known diabetic make the risk of any surgery in a diabetic patient no greater than that of the usual patient. A period of preoperative observation and care to get the patient in perfect metabolic and electrolyte balance is essential in avoiding needless risk and morbidity.

Emergency surgery need never be delayed merely for diabetes, though if acidosis is present a few hours of preparation may be lifesaving.

Local, caudal, or spinal anesthetics are the ideal choices, but ethylene and cyclopropane may be used. Ether should not be used in a diabetic patient.

Six-hour management during and following surgery makes the fluid and elec-

trolyte problem much more easily handled. Crystalline (regular) insulin is administered every six hours around the clock, depending upon the amount of glycosuria present until the patient can tolerate oral fluids and food.

REFERENCES

1. Bortz, W. M., Bortz, E. L.: Surgery of the diabetic patient: Changing concepts, *Am. J. Clin. Nutr.* 3:494 (November-December), 1955.
2. Cope, Z. M.: *The Early Diagnosis of the Acute Abdomen*, 10th Edition London, New York, Oxford University Press 1951; 270 Pp.
3. Goodman, J. K.: Management of diabetes mellitus during ketoacidosis, acute infection and surgery, *J.A.M.A.* 159:831 (October 29), 1955.
4. Spence-Sales, Dorthey, Mehta, Mark: Some endocrine problems in anesthesia for emergency surgery, *Medicine Illustrated*, 9:639 (October), 1955.

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COMPLICATIONS OF SUBMUCOUS RESECTION *

RALPH H. RIGGS, M. D.

SHREVEPORT

INTRODUCTION

The operation of submucous resection of the nasal septum has been developed and refined many times since its original description, in 1882, by Ingals.¹ To Freer² probably belongs the credit for the first great scientific presentation that popularized the procedure at the turn of the century and led to its wide acceptance. However, during the past decade, because of the complications that may result from this operation, its merits have been subject to much questioning. Although by this procedure it is possible to correct a considerable number of pathologic septal conditions, many such abnormalities of the caudal end of the septum and along the dorsum cannot be as satisfactorily excised.

During the first forty years of the present century many valuable observations were made on the anatomy of the nose, and many technical improvements in submucous resection were suggested. In 1946, Cottle and Loring³ described a technic for correction of nasal abnormalities based upon surgical and physiologic principles. Since then Cottle⁴⁻⁶ has repeatedly called attention to the physiology of the septum

and vestibule, and the importance of performing other rhinologic procedures along with the septal operation if normal nasal physiology is to be restored. Only with knowledge of the anatomy and physiology of the nose⁷⁻¹⁰ can one recognize, help prevent, and correct the numerous complications that may result from submucous resection. Among these are sagging or saddling of the cartilaginous vault, retraction of the columella, ballooning of the upper lateral or lobular cartilages, widening of the base of the nose and lobule, depression or flattening of the nasal tip, atrophy of the septal mucosa, adhesions between the septum and lateral nasal wall, perforations, and psychologic changes due to nasal deformity or disturbed respiratory function.

ETIOLOGY

These complications may be classified etiologically into those due to (1) loss of support, (2) scar tissue, (3) loss of support and scar tissue, and (4) surgical sequelae. *Loss of support* is brought about by "total" severance of the continuity. The cartilaginous and bony elements of the septum are involved and support of the dorsum from the cephalic limits to the caudal end of the septum is interrupted. This does not necessarily mean that all the cartilage and bone have been removed. In fact, a longitudinal cut in the septum, without removal of any portion of it, may interfere with support. This is often encountered in an injured septum and results in a deformity of the external nose and some of the listed complications.

The amount of *scar tissue* necessary to produce complications depends upon the patient, the neighboring structures, the extent of the surgical procedure, the propensity of the tissues and the steps that are taken to minimize or control formation of scar tissue. This was thoroughly discussed by Cottle,^{4,5} in 1948, and need not be considered further here.

The commonest *surgical sequelae* probably follows the operative injury to the mucopericondrium and mucoperiosteum. Another sequelae, perforation of the sep-

* Presented at the Seventy-seventh Annual Meeting of the Louisiana State Medical Society, New Orleans, La., May 7, 1957.

tum immediately after operation, occurs rarely with present technics but is still an important possibility.

COMPLICATIONS

Although each complication will be considered here as a separate entity, this does not mean that these complications usually are encountered separately. In fact, it is more likely that several will be found in the same patient. Also, in this discussion it is assumed that none of these complications were present preoperatively.

Sagging of the cartilaginous vault is the most obvious sequelae of submucous resection. It may range from a slight deformity to complete saddling. This complication may be immediate (occurring during the operation) or latent (as a late result of injury, operation, or both). If it occurs during the operation, it is due to lack or removal of support, usually the septum. However, abnormalities in the structure of the upper lateral cartilages and unusual conditions of the skin and subcutaneous tissue, especially if scar tissue is present, can also be a factor in support. If this complication is latent, it is probably due to scar tissue, although the support was probably weakened at the time of operation.

Retraction of the columella usually is not seen until some time after the operation even though it is latent and can be demonstrated clinically. It is caused by loss of the caudal end of the septum or nasal spine, or both. This may or may not be combined with injury to component parts of the columella.

Ballooning of the upper lateral or lobular cartilages. After submucous resection of the nasal septum, scar tissue may pull the cartilaginous dorsum toward the nasal cavities. This can increase the angle formed by these cartilages and the septum and thereby create a valvular abnormality. The lobular cartilages can be affected in the same way. *Ballooning of the lobular cartilages* is usually more noticeable in patients in whom the caudal end of the septum has been removed.

Widening of the base of the nose is al-

ways a real threat in the presence of loss of support of the nasal septum or nasal spine and the possibility of scar tissue pull. Cottle³ cautioned that every septum operation with possible "totality" requires prophylactic repair of the wide nose, since widening is apt to occur after a submucous operation.

Depression of the tip with an acute nasolabial angle can be due to too generous removal of the septum, especially along the anterior inferior portion, caudal end and spine. *Flattening of the tip, flaring of the wings of the lobular cartilage,* or both, may result from a pulling down (backwards) of the medial crura and dome and is due to cicatrization.

Atrophy of the septal mucosa may be caused from injury to the mucoperichondrium and mucoperiosteum and can result in a flabby septal membrane, crusting, frequent bleeding and finally perforation. Atrophy of the septal mucosa may or may not be associated with general nasal atrophy (atrophic rhinitis). *Adhesions* between the septal mucosa and lateral nasal wall, of course, are due to scar tissue forming between two injured areas.

Psychologic changes may be due to nasal deformity or disturbed respiratory function. The patient with disturbed respiratory function may complain of poor sleep, fatigue, allergic manifestations, nasal insufficiency, head pains, referred pains and symptoms referable to the chest.

The possibility of the development of such numerous and serious complications makes one reevaluate submucous resection operations and try to determine what can be done to prevent such complications. There is no doubt that the procedure is of great value in indicated cases, but particular care should be exercised to prevent development of complications. It should be possible to remove all the cartilaginous and bony septum, if necessary.¹¹ The septum should then be reconstructed to restore normal anatomic and physiologic relationships. Other rhinologic procedures should be performed along with the septal operation, if indicated and if

necessary to achieve a more desirable end result.

It should be remembered that in the patient whose external nose is malaligned, twisted or deformed, it is impossible to obtain a good functional result without some attention to the external pyramid (Fig. 1). Pathologic alterations of the upper lateral cartilages and lobule should be corrected at the time of the restitution procedure. Malformation, poor development or injury to the premaxillary area may cause underdevelopment or absence of the nasal spine (Fig. 2). This may be reconstructed to help produce a better functioning respiratory organ. In addition, pieces of cartilage (autogenous or isogenous) placed in the necessary region will help prevent deformities and also aid in the process of healing (Fig 3.).

SNMMARY

Submucous resection is a valuable procedure in indicated cases but it should be performed only by those well versed in the anatomy, physiology, and mechanics

of this region, if serious complications are to be prevented. Among these are sagging or saddling of the cartilaginous vault, retraction of the columella, ballooning of the upper lateral or lobular cartilages, flattening of the nose with or without depression of the tip, adhesions between the septal mucosa and lateral nasal wall, widening of the base of the nose, atrophy of the septal mucosa, perforations, injury to the mucoperichondrium and mucoperiosteum, and psychologic changes. These complications are due to loss of support, development of scar tissue, or a combination of these. It should be possible to remove and restore all the cartilaginous and bony septum, if necessary, and preserve normal anatomic and physiologic relationships.

REFERENCES

1. Ingals, E. F.: Deflection of the septum narium, *Arch. Laryng.*, 3:291 (Oct. 1) 1882.
2. Freer, O. T.: The correction of deflections of the nasal septum, with a minimum of traumatism, *J.A.M.A.*, 38:636 (Mar. 8) 1902.
3. Cottle, M. H. and Loring, R. M.: Corrective surgery of the external nasal pyramid and the nasal septum for

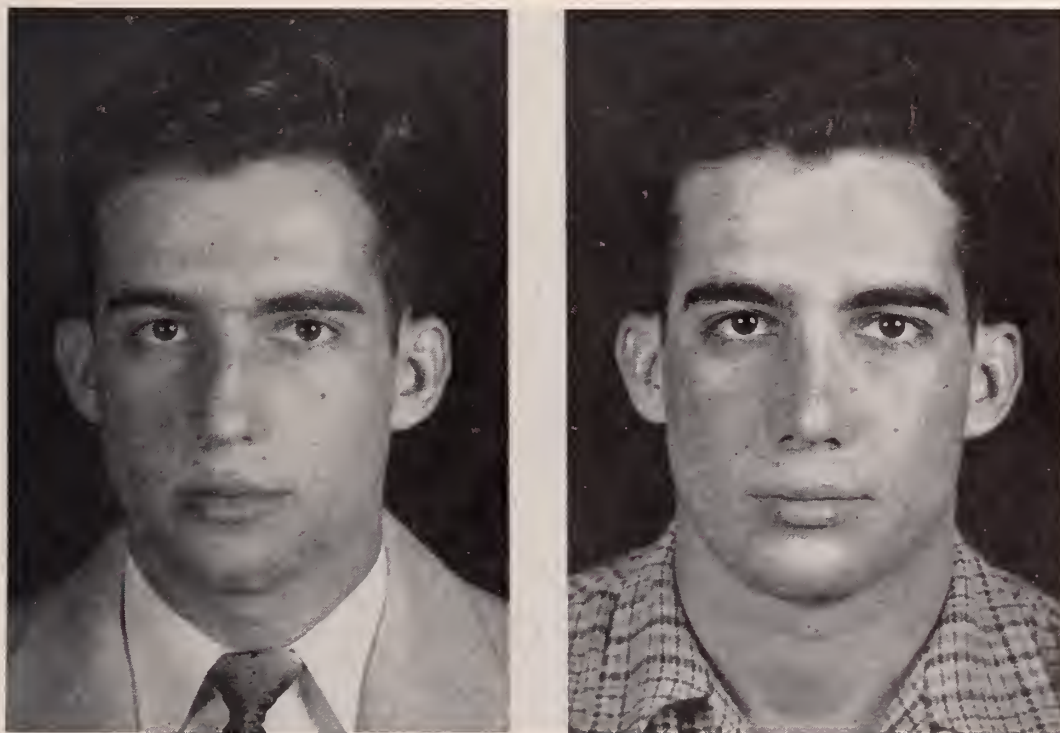


Figure 1.—(Left) Preoperative photograph of deformities of the bony and cartilaginous vaults and lobule, and an obstructing septum.

(Right) Photograph of patient after complete removal of septum with reconstruction, realignment of external pyramid, and operation on the upper lateral cartilages and lobule.



Figure 2.—(Left) Preoperative photograph of injured external nose, lobule and caudal displacement of septum.

(Right) Photograph after complete septal operation, with reconstruction, and procedures on external pyramid and lobule.



Figure 3.—(Left) Preoperative photograph of an injured nose requiring septal operation with reconstruction and procedures on the external nose, including many small cartilaginous grafts over cartilaginous dorsum.

(Right) Postoperative photograph.

restoration of normal physiology, *Illinois M. J.*, 90:119 (Aug.) 1946.

4. Cottle, M. H. and Loring, R. M.: Newer concepts of septum surgery: present status, *Eye, Ear, Nose & Throat Month.*, 27:403 (Sept.) 1948.

5. Cottle, M. H. and Loring, R. M.: Surgery of the nasal septum: New operative procedures and indications, *Ann. Otol., Rhin. & Laryng.*, 57:705 (Sept.) 1948.

6. Cottle, M. H.: Modified nasal septum operation, *Eye, Ear, Nose & Throat Month.*, 29:480 (Sept.) 1950.

7. Williams, R. I.: Functions of the nasal septum as related to septal reconstructive surgery, *Laryngoscope*, 63:212 (March) 1953.

8. Riggs, R. H.: The saddle nose, *South. M. J.*, 44:188 (March) 1951.

9. Riggs, R. H.: The relation of septum reconstruction to external deformities of the nose, *Laryngoscope*, 63:293 (April) 1953.

10. Cottle, M. H.: The structure and function of the nasal vestibule, *A.M.A. Arch. Otolaryng.*, 62:173 (Aug.) 1955.

11. Tucker, C. A.: Total removal of nasal septum, Presented before the meeting of the American Rhinologic Society, Oct. 10, 1956.

DISCUSSION

Dr. F. W. Raggio, Jr. (Lake Charles) "But don't let him operate on you!" I am sure that most all of you have either said those words to patients or have had patients say them to you. I know that I have had patients referred to me with this admonition—don't let him operate on you. I bring this up to illustrate the low point to which rhinologic surgery has descended. This was during the time which I call the "Dark Ages" of Rhinology, prior to 1945. This was before Dr. Cottle had begun to spread his gospel of septum and pyramid surgery and before Dr. Hansel's allergic teachings were widespread.

There are, in my opinion, two reasons for this low ebb in rhinologic surgery. First, is the inadequacy of the classical Killian type of submucous resection. This point was adequately covered by Dr. Riggs. Second, was our lack of knowledge concerning the diagnosis and treatment of nasal allergies.

This concept of nasal surgery, which Dr. Riggs had described, has opened up new horizons for the rhinologic surgeon. First, it enables him to do much more extensive procedures on the septum itself, especially the important caudal end, which we could not touch in the Killian type of operation. Second, it enables him to deal with the abnormalities of the external nasal pyramid, including the upper and lower lateral cartilages at the same time. Thirdly, and this was the point of Dr. Riggs splendid presentation, that complications can be prevented and corrected at the time of surgery.

Along with broadened horizons in rhinologic surgery has come an increased understanding of the nose from a physiologic standpoint. The knowledge of the "valve area" and the baffles and their effect on the air currents has enabled us to improve our rhinologic surgery physiologically, as well as anatomically. As mentioned by

Dr. Riggs, Dr. Maurice Cottle is largely responsible for this new concept; the knowledge of which Dr. Riggs and others throughout the country have generously shared with the specialty as a whole.

But don't let him operate on you! These words need not be said when referring your patient to a rhinologist well versed in present day Rhinology. We are now out of the Dark Ages.

PRIMARY SYSTEMIC AMYLOIDOSIS: CUTANEOUS MANIFESTATIONS A CASE REPORT *

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The following case is presented as an example of an interesting and unusual condition. Only 75 cases of this rare disorder were recorded up to 1955.¹

The skin as well as the internal organs may be the site of deposits of amyloid. This is a homogeneous degenerative substance of uncertain and apparently inconstant chemical composition. Amyloid, meaning starchlike, does stain with iodine. However, with iodine it turns a mahogany brown. Upon addition of sulfuric acid, a dark blue color forms, hence the designation of the substance as amyloid by Virchow.²

Amyloid is a complex protein characterized physically by its hyaline, structureless nature. It is known, histochemically, for its metachromasia, in that it takes a reddish color with such purplish dyes as gentian violet and crystal violet. This is evidence for a histochemical interaction between amyloid and these dyes. Mere adsorption of dyes does not ordinarily result in color changes of the dyes. Amyloid deposits are also known for their ability to absorb Congo red from the circulation.³⁻⁵

Secondary amyloidosis classically is related to protracted suppuration. Emphy-

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ema, lung abscess, and osteomyelitis were notable offenders, however, today's antibiotics have changed this picture. Secondary amyloidosis also occurs in association with plasmocytosis, Hodgkin's disease and chronic ulcerative colitis. The incidence of amyloidosis in multiple myeloma varies in different series, averaging 15 to 20 per cent. In secondary systemic amyloidosis the involvement is usually of the parenchymatous organs; in particular, the spleen, kidneys, liver, and adrenal cortex are involved. Amyloid nephrosis is a frequent cause of death in leprosy. The skin is little and rather uncharacteristically involved in secondary systemic amyloidosis.

In primary systemic amyloidosis, amyloid is deposited throughout the body. The blood vessels, connective tissues and muscles bear the brunt of the pathology in this form. Almost one-half of these patients have cutaneous manifestations. Purpura is the commonest skin lesion in primary systemic amyloidosis. A set of symptoms and signs occurs here with sufficient regularity to distinguish this form dermatologically.⁶ These signs and symptoms are: (1) a characteristic cutaneous eruption, (2) purpura and ecchymoses, (3) glossitis and macroglossia may be present, (4) pains and aches in the musculature, and (5) alopecia may also be present.

CASE REPORT

A 63 year old negro male was admitted to the dermatology ward of Charity Hospital in New Orleans on April 19, 1956. His complaints were redness around the eyes and "a weak skin that breaks easy".

Eighteen months prior to admission, he noted a reddish discoloration about both eyes. He was otherwise asymptomatic at this time.

One year prior to admission he had to give up his work as a masonite cutter which he had done for years. He found that his arms tired during his work day. In the morning he felt fine, but his arms in particular soon tired; his fatigue then became general. He was forced to leave work earlier and earlier, finally having to give up his employment. About this time he noted his skin becoming what he considered "weak and easily broken". This was initially noticed when, following urination, the required genital manipulation resulted in reddening and bruises in that area. About this time also, the skin over his

knees became reddened and bruised in appearance. He further noted that any slight rubbing or injury at almost any location would result in these reddening and bruises in the area.

About six months prior to his admission, he noted loss of hair from his axillae and pubic areas. These areas were otherwise asymptomatic. In addition, he admitted mild dyspnea upon climbing stairs. This was believed somewhat compatible with his sixty-three years. He did have nocturia times two.

Past history and family history were noncontributory. He was a man of exemplary habits, a nonsmoking teetotaler.

Physical examination: About both eyes were grouped shiny, smooth, firm spherical papules, of a reddish waxy color. Complete hair loss in both axillae and pubic areas had occurred (Figure 1). Scalp hair was thinned out but apparently this was physiologic. There was also some eyebrow

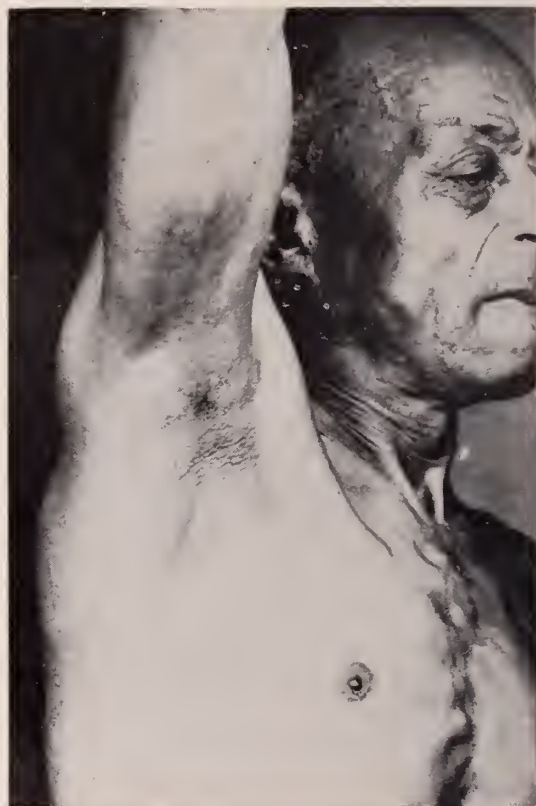


Figure 1. Showing papules about the right eye, and axillary alopecia. The darkened area in the axilla is an intracutaneous Congo red test, positive after three weeks.

thinning. Ecchymotic areas were present over his inguinal and perianal regions (Figure 2). Ecchymosis were most pronounced however, over both knee areas. Closer inspection revealed smaller scattered ecchymoses over various body areas. Two iatrogenic ecchymoses were present,

one where adhesive tape was placed and removed from over his sternal area following bone mar-



Figure 2. Showing circumanal ecchymoses.

row studies, the other over the upper eyelid which was grasped to insert eyedrops prior to ophthalmologic examination. This gentle maneuver ecchymosed his entire upper lid.

His tongue appeared mildly hypertrophic. X-rays of his chest, skull, long bones, and gastrointestinal tract were negative. Rumpel-Leede tests were negative on two occasions. Medical consultation and presentation to the Tulane medical conference of Charity Hospital substantiated the opinion of primary systemic amyloidosis. An electrocardiogram was within normal limits. Ophthalmologic consultation was essentially negative.

Laboratory: Liver and kidney investigations were without abnormal findings. A fasting blood sugar was 78 mgm. per cent. Serum proteins were within normal limits. No cryoglobulins were found. The S.T.S. was negative. Two hematologic consultations were obtained. The first was concerned with the peripheral blood and coagulation studies and was reported as a very mild normochromic normocytic anemia with a minimal lymphocytosis. Sick cell prep was negative. No coagulation abnormalities were present. The second hematologic consultation was concerning a bone marrow study, the report was mild hypoplastic bone marrow. Urine studies showed a two plus albumin on one occasion. Several other specimens were negative. Tests for Bence Jones protein were negative on two occasions. A Congo red test was performed. The intravenous method of Benhold⁵ was first considered, but for safety reasons⁷ and probably because, as dermatologists, we prefer to see what is going on whenever possible, we selected the suggested method of Nomland,³ which is an intracutaneous injection of Congo red. We used 0.1 cc. of a 1 per cent solution and this delineated well the inguinal and axillary amyloid areas. Positive test areas remained as deeply pink stains for the five weeks

we were able to observe this patient. Skin discoloration from intracutaneous Congo red was gone from the nonamyloid regions after a few days. Positive Congo red skin tests resemble merthiolate* stains and were mistaken for them. It is suggested that when used, this test be given in areas showing amyloid histologically and also given in nonamyloid areas as controls. Our pathology department advised us that to biopsy this Congo red test area would be to no avail for histological study because of the small amount of dye that might be in the microscopic section.

Pathology reports: Positive findings in the right axilla, the gingiva⁸ and the outer lower right eyelid. The scalp was negative for amyloid histologically. The pubis showed amyloid deposits around the skin appendages, particularly the hair follicles.

COMMENTS

According to Dahlin,⁹ cutaneous manifestations occur in primary systemic amyloidosis in 50 per cent of the cases. Macroglossia occurs in 50 per cent of the cases. There was only slight indication here of its presence. Multiple myeloma is frequently found in association with amyloidosis. It was not present here.

The skin findings in secondary amyloidosis are almost nonexistent, and atypical when present.

The skin findings in primary systemic amyloidosis herein presented, we believe to be characteristic.

SUMMARY

A case of primary systemic amyloidosis is presented. We believe the dermatologic associations, when seen, are characteristic of this rare condition.

REFERENCES

1. Cecil, R. L., and Loeb, R. F.: Textbook of Medicine, Philadelphia, W. B. Saunders Co., 1955, p. 718.
2. Virchow, R. L. K.: Cellular Pathology Based on Physiology and Pathological History, New York, Robert DeWitt, 1860, p. 409-437.
3. Nomland, R.: Localized (lichen) amyloidosis of the skin, A.M.A. Arch. Dermat. & Syph., 33:85, 1936.
4. Harman et al.: A.M.A. Arch. Int. Med., 70:416, 1942.
5. Benhold, H.: Ueber die Ausscheidung Intravenos Einverleibten Kongorotes bei den Verschiedensten Erkrankungen Insbesondere bei Amyloidosis, Deutsch Arch. f. Klin. Med., 142:32, 1923.
6. Michelson, H. E., and Lynch, F. W.: Systematized amyloidosis of the skin and muscles. Arch. Derm. & Syph. 29:805 (June) 1934.
7. Selikoff, I., and Bernstein, I. J.: Systemic reaction to the intravenous administration of Congo red, Quart. Bull. Seaview Hospital, 8:131, 1946.
8. Selikoff, I., and Robitzer, E.: Gingival biopsy for the diagnosis of generalized amyloidosis, Am. J. Path., 23:1099, 1943.
9. Dahlin, D. C.: Primary amyloidosis with a report of six cases, Am. J. Path., 25:105, 1949.

* Trade Mark

DISCUSSION

Dr. Vincent Derbes (New Orleans): This interesting case report stimulates discussion of several points. In the first place, their wisdom in avoiding an intravenous Congo red test is attested to by an unfortunate medical experience in Minnesota. In this instance a man with this condition was subjected to an intravenous Congo red test. The test was positive in the sense that the dye-stuff was taken up by the patient's skin. The generalized vivid red color has now persisted for several years.

Again, the authors point out that reduced incidence of secondary amyloidosis is probably due to the effectiveness of antibiotic treatment of chronic suppurative processes. On the other hand, in conditions in which the response to such treatment is slower, amyloidosis continues. Thus, in the past year we have seen at Charity Hospital a half dozen new cases of leprosy, the majority with amyloidosis.

Numerous theories have been advanced on the production of amyloid in the organism. The most widely accepted theory today is that the precipitation of amyloid is the result of an antigen-antibody reaction. This theory receives support from the very frequent occurrence of amyloidosis in hyperimmunized horses used for the production of tetanus antitoxin. It has also been possible to induce amyloidosis in experimental animals by the injection of pus, sodium caseinate, Freund's adjuvant and numerous other substances. A feature common to all experimental studies, as well as to many human instances, is the increase in the absolute amount of blood globulins. Thus chronic hyperglobulinemia seems to be an important factor in the production of secondary amyloidosis. In the type of amyloidosis under discussion, this hyperglobulinemia need not be present.

There is no effective treatment for this condition. Experimental work in animals indicates that corticoids are injurious and suggests that, at least in the secondary type, thyroid substance is beneficial.

THE DIAGNOSIS AND CONSERVATIVE TREATMENT OF LOW BACK PAIN

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In almost all specialties and certainly in the general practice of medicine, back-

ache is a common complaint heard many times daily. The attitude that very little can be done for backache is still held by many laymen and even some in the medical profession. Such a pessimistic attitude is not justified if an accurate diagnosis is combined with treatment that is tailored for the individual case.

DIAGNOSIS

In the diagnosis of back pain we follow the same procedure as we should do for all patients, and this consists of a detailed history, physical examination, x-ray studies, and if necessary, laboratory studies. We must keep in mind that back pain can be caused by nonorthopedic as well as orthopedic conditions. One method of classification of orthopedic backaches is to place them into one of the following four categories; mechanical, congenital, inflammatory, and neoplastic. The nonorthopedic conditions include genitourinary, gynecological, visceral, and systemic abnormalities. This discussion will be limited to certain aspects in the diagnosis and conservative treatment of low back pain arising from orthopedic conditions. Most of the causes for backache are on a mechanical basis and include such conditions as sprains, strains, postural back pain, and protruded or degenerated intervertebral discs. A lumbosacral pain is ordinarily a result of an injury. The onset can be acute and painful as a result of a severe injury. On the other hand the disability can be just as great if it occurs while stooping over to pick up a pencil from off the floor. The history may suggest a chronic strain due to poor postural attitudes such as from long hours over a workbench. Careful explanation of the underlying cause to the patient and employer is of more benefit than a "muscle relaxant" prescription after a cursory examination.

The protruded disc is the most common cause of low back pain with sciatic radiation. Sciatic radiation must be one of the complaints before such a diagnosis is seriously entertained. Intermittent low back pain for several months or years before

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sciatica is the history in about half of the cases. It is important not to consider that all cases with sciatic radiation are caused by protruded discs. Sciatic radiation can occur from nerve root irritation secondary to narrowing of the foraminal exit or from bony spurs or from inflammatory edema of the nerve roots from a sprain.

A patient with nerve root irritation or compression will usually relate that the radiating pain is brought on by certain back motions or from coughing or sneezing. Localization of the lesion may be suspected from hearing the patient describe the distribution of the radiating pain. Almost 95 per cent of the disc ruptures occur either at the fourth or fifth lumbar interspaces. Lumbosacral disc protrusion compresses the first sacral nerve root more than any of the other nerve roots. This may result in loss of the ankle reflex and decrease of sensation along the lateral aspect of the foot and leg. Calf atrophy is present if compression is not of fairly recent onset.

The disc between the fourth and fifth lumbar vertebrae usually compresses or irritates the fifth lumbar nerve root. There may or may not be reflex changes in the knee or ankle. There is frequently a varying degree of sensory loss in the first and second toes and dorsum of the foot. Weakness of dorsiflexion of the great toe is not uncommon.

Some authorities believe that lesions of the intervertebral discs are the basis of practically all back pain, while others say that there are varied causes. One may ask how can there be such a variance of ideas among experienced writers. It is true that the normal disc is very rarely the site of back pain, while there is increasing evidence to show that degenerating lower lumbar discs are common and result in a predisposition for unexpected or unusual strain. Certainly not all degenerated discs cause symptoms. Microscopic degeneration of intervertebral discs begins routinely in early life to a variable degree, depending on congenital and environmental influences. It is true that the protruding disc

practically always occurs at the site of a degenerative disc, except possibly from acute trauma displacing a normal disc. A degenerated disc is often the site of instability and thus any form of stress, acute or chronic, is apt to result in back strain. The numerous articles on this subject of disc degeneration emphasize the importance, frequency and lack of entirely satisfactory explanation.

In patients with developmental or congenital defects as basis for back pain, the symptoms usually begin in early adulthood and the pain is made worse by activity and relieved with rest. A family history may denote similar difficulties in the past. Congenital anomalies such as transitional vertebra, asymmetrical facets, hemivertebra, spina bifida occulta, and spondylolisthesis are all fairly common. These conditions predispose to back pain because of impaired ligamentous support or attachment.

Inflammatory causes for back pain will not be discussed but include such conditions as Marie-Strumpell arthritis and tuberculosis. These conditions may be missed if not considered as possibilities or if the sacroiliac joints are not checked carefully.

Neoplastic involvement should also be considered and may be either a localized process or a generalized metastatic involvement. A benign lesion such as osteoid osteoma can give rather severe pain without much in the way of physical findings. Many of the neoplasms are insidious at onset but pain may be steadily progressive and unrelated to activity. A detailed discussion of the various neoplasms will not be attempted in this report. The physician should not forget to repeat films occasionally if the patient is not responding to treatment. In this way early lesions or infections may be diagnosed.

Several causes of backache mentioned in the earlier literature are now considered to be unusual causes of back pain. Among these are sacroiliac strain or sprain, hypertrophy of ligamentum flavum and pyriformis spasm. Fibrositis is

not a well defined entity and not as commonly diagnosed as in previous years.

Physical examination should be carried out with full exposure of the entire back and lower extremities. Observation of the patient as he walks into the office and prepares for examination is very helpful. The general posture is noted and also any deviation of the spine, such as a list, scoliosis, increased lordosis or flattening of the normal lumbar curve. A routine procedure for examination will help prevent overlooking certain parts of the examination. While observing the patient's back he is asked to move through various motions including flexion, extension, lateral bending and rotation. The examiner notes and records the degree of restriction, muscle spasm and tenderness. Some idea is obtained of the patient's pain threshold and how much he is trying to impress the examiner with his disability. The patient is then placed on the examining table in the supine position and the straight leg raising tests are carried out, as well as other leg tests that have been described. The straight leg test is probably the most valuable of these tests. A record is made of the location of the pain on raising the lower extremity with the knee extended. Also the number of degrees is noted at which the pain occurs, keeping in mind that tight hamstrings will give normally restricted straight leg raising tests with a sensation of tightness in the back of the thigh. Measurements are then carried out for leg lengths and circumference of the thigh and calf. A routine sensory examination with a pin is considered important. Examination is made to test the power of dorsi flexion of the big toe and ankle. The patient is then examined in the prone position. Palpation is made at the sciatic notch and the posterior thigh for sciatic tenderness. The knee and ankle reflexes are tested. Occasionally palpation of the back will reproduce the patient's pain and this may

be helpful localizing any abnormality.

Roentgenological studies of superior quality are essential in diagnosing certain conditions and ruling out other diagnoses. The films are repeated if they are unsatisfactory. The AP, lateral and oblique positions, as well as a spot lateral of the lumbosacral joint are considered routine in most instances. One should not forget to check the sacro-iliac joints on the x-ray films in order to rule out such diagnoses as Marie-Strumpell or other infectious lesions. An old compression fracture of the dorsal spine may result in compensatory increase in the lumbosacral angle causing low back symptoms.

Laboratory studies are helpful in certain instances such as in multiple myeloma, infectious processes, Paget's disease, or other conditions causing low back pain.

TREATMENT

The treatment to be described in this report will be intended for the back pain arising on a mechanical or developmental basis, which includes the large majority of backaches. In general, the plan of treatment in most cases is to overcome the acute pain by rest and immobilization and then to gradually ambulate the patient without neglecting to improve muscle tone and posture in order to keep recurrences at a minimum. The underlying cause of each case should, of course, be determined and corrected as far as possible. One of the most common reasons for ineffective relief is the failure to keep the patient on bedrest long enough to overcome the acute pain before ambulating and discharging him back to work. The lack of follow-up in the management of the patient may predispose to recurrent episodes. These faults commonly stem from the patient's not carrying out instructions or from his failure to understand the purpose of the treatment. It is the doctor's responsibility to repeat instructions often enough for the patient to have a thorough understanding of the

program to be carried out.

On deciding to treat a patient for back pain, decision must then be made whether to treat him on an ambulatory basis, or on bedrest either at home or in the hospital. The severity of each case should decide which method to advise. The less severe and acute case can often be managed on an ambulatory basis, but in the more acute case bedrest at home for a period of two or three weeks may be carried out. If the patient has difficulty in walking, the recommended treatment is bedrest in traction for two weeks or until relief is obtained. In most cases physiotherapy consisting of diathermy and massage are beneficial, if there is muscle spasm. A corset support is frequently very helpful and in some cases quite important until the patient is able to strengthen the proper muscles sufficiently to carry on without support. Other methods of support such as strapping or bracing can also be utilized. In all cases a graduated program of exercises is recommended in order to overcome any contractures and improve the tone of the supportive muscles. These exercises must be postponed until most of the acute tenderness and muscle spasm have subsided. The most effective way to overcome the acute pain and muscle spasm is to place the patient on complete bedrest in the hospital in a Gatch type of bed in the semi-Fowler's position. Most patients will be more comfortable in this position than flat in bed. The Fowler's position overcomes the lordosis thus opening up the posterior part of the lumbosacral joint both at the foramen, which contains the nerve root, and the posterior part of the disc space. It takes the stress off of the facets and corrects any so-called settling or subluxation. The hospitalized patient is also placed in pelvic corset traction with from seven to ten pounds on each side. The pelvic traction helps to enforce complete bedrest, as well as relieving the back pain to a considerable degree. Sedation is given as required. The mattress should be moderately firm and

nonsagging. Bedboards are placed under the mattress. The response is variable and an average of two weeks in traction is required. In some cases a lumbosacral support is fitted prior to getting up. Ambulation is very gradual to prevent recurrence until the muscles are strengthened. Postural exercises are advised in many cases. The exercises are of particular value in those cases with poor abdominal muscle tone and excessive lumbar lordosis, as so often seen in postural or mechanical type of back pain. The regular performance of a series of exercises as described by Williams will assist in flattening out the lumbar spine by strengthening the abdominal and gluteus maximus muscles and stretching of the contracted paravertebral muscles. A weight reduction program is of utmost importance if there is obesity. Recurrent strain may be avoided by telling the patient to avoid lifting heavy weights, to bend at the knees rather than at the low back region, to avoid hyperextending the lumbar spine as when carrying a weight at above the shoulder level, to avoid sleeping face down since this increases the lordosis, to relieve the strain from the low back region when standing by placing one foot on a small foot stool, and to avoid long automobile trips. As stated before, the majority of patients with low back pain and sciatica will respond to this conservative treatment.

One must keep in mind that continued conservative treatment in the face of progressive or continued neurological deficit is not justified and will likely result in an unsatisfactory result. The decision as to when to operate varies with each case depending on the number of previous attacks, degree of neurological deficit, extent of improvement on conservative treatment, age of patient, the degree of functional overlay, plus many other considerations.

Myelography is performed after decision is made for surgery. It is used to assist in localization and thus possibly

eliminate the need to explore two interspaces.

Manipulation of the back has a very limited place in the treatment of low back conditions. In certain carefully selected cases of an acute "catch" in the back without sciatic radiation and without x-ray abnormalities, manipulation carefully performed may result in dramatic relief of pain. An attempt should be made to correct any predisposing conditions following the manipulation.

Occasionally a patient will be found to have a localized painful or so-called trigger point in the superficial fascial or aponeurotic tissues. Steindler has shown that local anesthetization of this trigger point may result in some lasting benefit from the referred type of pain. If the pain recurs after a few injections, then excision of the trigger point lesion can be performed.

CONCLUSION

An attempt has been made to minimize the pessimistic attitude toward back pain in general. Not all back pain with sciatica is caused by protruded disc material.

The examiner must analyze a carefully taken history, a thorough physical examination along with sufficient x-ray and laboratory studies in order to adequately diagnose the numerous causes of low back pain.

The cooperation of the patient is essential in order to obtain the maximum benefit from a plan of treatment that may in some instances extend over a prolonged period of time.

REFERENCES

- Williams, P. C.: Lesions of the lumbosacral spine: II Chronic traumatic (postural) destruction of the lumbosacral disc. *J. Bone and Joint Surg.*, 19:690, 1937.
- Mixer, W. J., and Barr, J. S.: Rupture of the intervertebral disc with involvement of the spinal canal. *New England J. Med.*, 211:210, 1934.
- Breck, L. W., and Basom, W. C.: Flexion treatment for low back pain: Indications, outline of conservative management and new spine fusion procedure. *J. Bone & Joint Surg.*, 25:58, 1943.

PHENYLBUTAZONE (BUTAZOLIDIN) IN THE TREATMENT OF THROMBOPHLEBITIS; A PRELIMINARY REPORT *

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NEW ORLEANS

In the practice of Obstetrics and Gynecology at Charity Hospital of Louisiana in New Orleans, there are a fair number of patients exhibiting thrombophlebitic processes. Thrombophlebitis may arise, in patients with preexisting lower extremity varicosities associated with pregnancy or gynecologic pathology, as a retrograde extension of suppurative pelvic thrombophlebitis, as a sequela to the intravenous administration of fluids or medications, and spontaneously in postoperative, postpartal, or debilitated patients.

The overall management of treatment in patients with thrombophlebitis encompasses three general objectives: the prevention of embolization; the localization of the disease process; and the diminution of pain, inflammation and edema. To fulfill these goals, several methods of management have been devised.

The utilization of vena cava and bilateral ovarian vein ligation has certainly controlled embolization and localized the disease process in suppurative pelvic thrombophlebitis.¹⁻³ Ligation of other veins, i.e. iliac, femoral, or saphenous, have accomplished the same purpose in more distal localized phlebothrombosis or thrombophlebitis. Lumbar sympathetic blocks have proven beneficial in increasing the blood supply to the lower extremities in cases

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of thrombophlebitis by reducing vasospasm, in turn relieving a part of the pain and aiding in the reduction of edema. Antibiotics have played a role in the reduction of perivascular and intravascular inflammatory processes in those cases of an infectious etiology. They are, however, of little or no value in thrombophlebitis produced by chemical irritation of the endothelium. Anticoagulants have been used prophylactically in selected cases in an attempt to control embolization.

In the treatment of thrombophlebitis of the superficial veins, no matter what the etiology, the routine regimen of treatment leaves much to be desired regarding rapid reduction of pain, tenderness, inflammation, and edema. The use of phenylbutazone in our hands has been confined to patients with thrombophlebitis of the superficial veins of the extremities, and in addition, to patients who have had vena cava ligation for suppurative pelvic thrombophlebitis and have or develop a retrograde thrombophlebitis. In the latter when routine management by lumbar sympathetic blocks, antibiotics, and rest for the relief of pain, fever and edema had failed, phenylbutazone was used to afford complete relief of symptomatology.

Stein^{4,5} has suggested that this drug may be highly effective in the rapid control of the symptomatology of thrombophlebitis of the superficial veins of the extremities. In view of his encouraging reports, the use of phenylbutazone in the treatment of thrombophlebitis of the superficial veins of the extremities was initiated in November 1955, on the Tulane Unit, Division of Obstetrics and Gynecology at Charity Hospital in New Orleans.

CHEMISTRY AND PHARMACOLOGY

The search for an effective antipyretic with a minimum of side effects has been undertaken since the introduction of cinchona bark in 1640. Salicylic acid was discovered in 1875 to have antipyretic properties and has been studied extensively since that time as has the quinine molecule. Various synthetic compounds since

have been introduced and studied both for clinical efficacy and toxicity. Phenylbutazone, which is a pyrazole compound, was introduced by Stenzl⁹ in 1949. Originally phenylbutazone was used in combination with aminopyrine (irgapyrine or butapyrin) to promote the solubility of aminopyrine. Due to the toxicity of the combined drugs, phenylbutazone has been used alone since 1951.^{6,7} In a comparative toxicity study, Kidd⁷ reported an incidence of toxic reactions in 26.7 per cent of cases using phenylbutazone alone as compared with 68 per cent using butapyrin.

Chemically phenylbutazone is 3,5 Dioxo-1, 2 di-phenyl-4-butyl pyrazolidine, a white or slightly yellow crystalline powder of bitter taste in the pure state which is insoluble in water but may be dissolved in alkalis, ethyl alcohol, and other organic solvents. The sodium salt is readily soluble in water. The route of administration may be either oral or parenteral depending upon the desired speed of reaction and gastrointestinal complications. Brodie⁸ noted that in patients on a daily oral dose of 800 mgms. the plasma concentration from the fourth to the fourteenth day ranged from 60 to 150 mgm/liter but that the level in each individual subject was relatively constant and the plasma concentration failed to increase in proportion to an increase in daily oral dose after the dose exceeded 800 mgm/day. Even at a dose of 1600 mgm/day, the plasma level was only 10 per cent higher than at 800 mgm/day. The level at 800 mgm/day was slightly higher than at 400 mgm/day. Therefore the authors felt that there was little to be gained by increasing the dosage over 600 mgm/day. The dose for the intramuscular route is approximately 1 gram/day. By the intramuscular route, the rate of absorption is slower and peak plasma levels are not obtained until six to eight hours following injection. By the oral route, the plasma peak concentration is reached in about two hours and a plateau is reached in three to four days of oral administration which remains relatively constant thereafter. Following dis-

continuation of phenylbutazone the plasma concentration decreases at the rate of approximately 15 per cent per day.

Domenjoz and Wilhelmi as cited by Byron⁹ and Currie¹⁰ report the analgesic effects of phenylbutazone to be approximately equivalent to acetophenetidin; the antipyretic effects to be approximately equivalent to antipyrine; and the anti-inflammatory effect to be greater than that of cortisone or corticotropin.

The analgesic effects were studied in animal experiments by determining the threshold for stimulation of the dental pulp in rabbits. The anti-inflammatory effects were demonstrated by inhibition of edema produced by the injection of egg albumin or formalin into the legs of rats. Wilhelmi^{11, 12} demonstrated anti-inflammatory effects of butazolidin by the delay in the appearance of erythema on the shaved backs of guinea pigs exposed to ultra violet light, and by the reduction in edema and capillary permeability in mice ears irritated with croton oil. Domenjos¹³ also demonstrated a diminished capillary permeability to colloidal dyes and marked antihistaminic effects in the perfused rabbit ear and in the guinea pig using butazolidin. The antipyretic effects were shown using rats infected with *E. coli* organisms.

Steinbrocker¹⁴ reports antiarthritic effects of a notable degree in 25 per cent of his cases of rheumatoid arthritis and that analgesia may usually be noted in one to three days with objective signs of improvement in three to seven days.

Phenylbutazone has been used as an antipyretic, analgesic and anti-inflammatory agent in a variety of clinical conditions: The various forms of arthritis, including rheumatoid arthritis, rheumatoid spondylitis, osteoarthritis, gout, and traumatic arthritis.^{7-10, 14-22} In addition, it has been used for the symptomatology of Hodgkins disease,^{23, 24} acute rheumatic fever,^{25, 26} postoperative thoracotomy²⁷ and periarteritis nodosa.¹⁸

The route of metabolism and mode of action are known only to a limited ex-

tent. Phenylbutazone and cortisone are similar in action in that they are both anti-inflammatory, antipyretic, and produce the side reactions of edema formation with sodium retention and may reactivate peptic ulcers. Phenylbutazone, however, is a synthetic pyrazole derivative which will not maintain adrenal function in hypophysectomized animals; alter the 17-Keto-steroid urinary excretion; cause eosinopenia or lymphopenia; change the glomerular filtration rate; or change the insulin requirements of diabetics. Cortisone on the other hand is a steroid hormone which will maintain adrenal function and does not cause anemia, granulocytopenia, agranulocytosis or stomatitis.^{8, 9, 15}

Phenylbutazone is rapidly and almost completely absorbed by the gastrointestinal tract⁸ and the oral route has been used in this series for simplicity, rapidity of effect, and consistency of absorption. Kuzell¹⁶ believes that the intramuscular administration gives a more rapid remission in cases of acute gout and Kidd⁷ claims no gastrointestinal complications when phenylbutazone is given intramuscularly.

TOXICITY

The toxic reactions to phenylbutazone have varied considerably both in type and extent. The range in reported incidence of toxic manifestations is from 0 to 100 per cent depending upon the authors quoted. The most commonly reported toxic reactions were gastrointestinal disturbances, including peptic ulcer hemorrhage and perforation, fluid retention and edema; blood changes to include leukopenia, thrombocytopenia, anemia, and agranulocytosis; and dermatologic changes such as morbilliform rash and exfoliative dermatitis.^{6-10, 14-24, 28-39} It must be noted here that the majority of these patients were being treated for arthritic conditions for relatively long periods of time and usually following previous treatment with such drugs as salicylates, gold, and steroids which may have added to their complications. Regarding the problem of gas-

trointestinal disturbances, Bellomo and Fusco⁴⁰ reported that phenylbutazone orally acts as an immediate stimulus to the gastric mucosa to produce an increase in the quantity of the gastric juice secreted with a concomitant increase in acidity. The drug has been recommended to be given with or immediately following meals. Bunim¹⁵ in a review of 2301 cases stated that there was a reported incidence of toxic reactions in 32 per cent of all patients taking phenylbutazone in which 38 per cent of these were severe enough to require interruption or termination of treatment. Currie¹⁰ reports an incidence of 4.7 per cent most of which were mild and, out of 425 cases treated, only 3 required that the drug be discontinued. This low incidence of toxicity was attributed to careful dosage and selection of management for patients. Kuzell,¹⁷ in a series to show the effects of prolonged administration of phenylbutazone listed 100 cases being treated for rheumatoid disorders over periods from twelve to fifty-four months for a total of 84,870 patient days at the usual daily dose of 300 to 400 mgms, listed only 6 cases in whom the drug had to be discontinued permanently because of untoward effects.

Of the 12 deaths listed as due to the administration of this drug there were 5 due to agranulocytosis,⁴¹⁻⁴⁵ 3 with peptic ulcers complicated by hemorrhage¹⁷⁻⁴² or perforation,⁴⁶ 1 aplastic anemia,⁴⁷ 1 hypersensitivity,⁴⁸ 1 hypersensitivity with rash,⁴⁹ and 1 "gas gangrene".⁴⁶ In these 12 cases the age varied from 44 to 75 years, the total dosage ranged from 4 gms. to 414 gms. over intervals from 8 to 1034 days. THERE WERE NO DEATHS IN PATIENTS RECEIVING THE DRUG FOR LESS THAN EIGHT DAYS AND NONE WAS KNOWN TO HAVE BEEN RECEIVING EXCESSIVE DOSES. ALL BUT ONE OF THESE CASES WERE BEING TREATED FOR RHEUMATOID ARTHRITIS.

As we have used phenylbutazone in the treatment of thrombophlebitis, the dosages have been of a relatively low range and

over a short-time period.

METHOD AND DOSAGE

It has been our practice to administer this drug in the following dosage schedule: 200 mgms. three times a day with meals for three days, then 100 mgms. three times a day with meals with the general rule that the drug be discontinued twenty-four hours following the cessation of symptoms. In the vast majority of patients, five days of therapy was all that was necessary to obtain the desired results.

At the initiation of phenylbutazone therapy a complete blood count, hematocrit, urinalysis, and microscopic studies of the urine were performed. These were repeated every other day until the termination of therapy. All of the patients except one were hospitalized and under close supervision. Examinations for dermatologic changes and symptoms of toxicity were made twice daily. The toxic manifestation of edema formation was not observed in this series. Reduction in pre-existing edema was used as a criterion for our evaluation of the clinical response to phenylbutazone in thrombophlebitis. This may be explained by the anti-inflammatory effect of the drug upon the edema produced by the pathologic process.

PREDISPOSING FACTORS

Predisposing factors in the cases of thrombophlebitis treated in this series are listed in Table 1. Postoperative, postpartal,

TABLE 1
ETIOLOGY OF THROMBOPHLEBITIS
BUTAZOLIDIN SERIES

Predisposing Factors	Cases
Postoperative	15
Postpartal or postabortal	10
Following intravenous therapy	8
Pregnancy with varicosities	2
Trauma to calf	1
Total	36

and postabortal cases comprise the majority in this group. Included are 6 cases in whom vein ligations had previously been performed for deep phlebitis, and retrograde thrombosis had developed. The problem of thrombophlebitis developing in va-

ricosities aggravated by pregnancy is serious and the clinical response shown by 2 patients was gratifying. Both subsequently delivered normal infants without difficulty weeks later. Intravenous administration of medications, blood, or fluids is always a potential etiologic factor in phlebitis and often may be difficult to control. Antibiotics are of little value in such chemically induced phlebitic processes. Phenylbutazone has been most valuable in this type of case. Usually within hours satisfactory results are obtained. It has been our experience that, when using other forms of therapy, symptoms persist for days or weeks. Three patients developed subsequent recurrences of phlebitis at later dates and repetition of phenylbutazone was necessary and effective.

LOCATION

Table 2 depicts the location and extent

TABLE 2
LOCATION AND EXTENT OF THROMBOPHLEBITIS

	Right	Left	Bilateral
Calf	7	13	3
Thigh	8	12	3
Arm	7	2	0

of the venous involvement in both superficial and deep veins. The occurrence of the majority of cases in the right arm is due to the fact that the right arm is more convenient to use for intravenous fluids during surgery.

TYPE

As previously stated, the majority of patients in this series were treated for thrombophlebitis of the superficial veins. (Table 3) Six of these cases had deep

TABLE 3
TYPE OF THROMBOPHLEBITIS

Type	Right	Left	Bilateral
Superficial			
Calf	5	11	1
Thigh	6	10	1
Deep *			
Calf	2	2	2
Thigh	2	2	2

* Retrograde thrombophlebitis following vein ligation.

phlebitis. They were due to retrograde thrombosis following vein ligations.

PREVIOUS THERAPY

The methods of therapy utilized prior to

the initiation of phenylbutazone therapy varied. Lumbar sympathetic blocks, antibiotics, anticoagulants and vein ligations, alone or in combination were used. Twenty-one cases who had had other methods of therapy and had failed to respond or in whom the results were not definitive, were placed on phenylbutazone therapy. In 15 cases phenylbutazone was used as the primary therapy. (Table 4).

TABLE 4
PREVIOUS THERAPY

Method	Cases
Antibiotics	19
Lumbar sympathetic blocks	7
Vein ligations	
Bilateral femoral	1
Vena cava—ovarian	5
Anticoagulants	1
Sulfa drugs	1
No therapy	15

TOTAL DOSAGE

Twenty-four hours after a clinical response had been obtained the drug was discontinued. The average total dose required was 2.3 gms. given over a period averaging slightly less than five days. The shortest duration of treatment was forty-eight hours and the longest sixteen days. Only one patient had a total dose exceeding 3.3 gms. (Table 5)

TABLE 5
DURATION OF TREATMENT AND TOTAL DOSAGE

Duration	Total Dose	Cases
2 days	1.2 gms.	5
3 days	1.8 gms.	6
4 days	2.1 gms.	7
5 days	2.4 gms.	3
6 days	2.7 gms.	6
7 days	3.0 gms.	7
8 days	3.3 gms.	1
16 days	6.6 gms.	1

CLINICAL EVALUATIONS

Several criteria were used in the evaluation of clinical results. The analgesic, antipyretic, and anti-inflammatory actions of phenylbutazone in phlebitis are listed in Table 6. The most rapid response, and usually the first to be noted by the patient, was relief of pain. Reduction in systemic temperature, local heat, and conversion of Homan's sign from positive to negative, were relatively rapid. Resolution of the

TABLE 6
CLINICAL RESPONSE TO BUTAZOLIDIN

Type Response	0-48 hrs.	48-96 hrs.	Over 96 hrs.
Edema reduction	12	13	3
Homan's sign reverted from pos. to neg.	12	2	2
Local heat reduction	24	6	2
Relief of pain	32	3	1
Temperature reduction	18	8	2
Induration reduction	6	11	2
Local tenderness reduction	19	10	7

disease process as observed by reduction of edema, induration and tenderness required a longer period of time. In the majority of cases there was complete resolution by the fourth day. Sixty-three per cent of all favorable results were demonstrated within two days and by the end of five days 90 per cent were recorded.

TABLE 7
CLINICAL EVALUATION OF RESPONSE

Results	Major Improvement in	Cases
Excellent	Less than 48 hours	21
Good	Less than 72 hours	11
Fair	Less than 96 hours	2
Poor	Over 96 hours	2

TOXIC REACTIONS

There were no serious toxic reactions observed in this series. One patient with a past history of a peptic ulcer developed mild epigastric pain after ten days of treatment but there were no signs of gastrointestinal bleeding. The epigastric pain subsided upon termination of therapy. Three patients showed a relative reduction in leukocyte counts after being under phenylbutazone therapy. Of these 3, 2 had been under therapy six days and one seven days. Reductions in leukocyte counts in these cases were not marked (13,200 to 4150, 9000 to 5000, 12,000 to 7100). These are actually within a range compatible with the clinical response to an inflammatory process. There were no signs or symptoms of fluid retention, dermatologic changes or other toxic reactions.

SUMMARY AND CONCLUSIONS

1. The preliminary work leading to the therapeutic trial of phenylbutazone in the treatment of thrombophlebitis is discussed.

2. Thirty-six patients* were treated using moderate dosages over short periods. Our methods of therapy, observations for possible toxic reactions, and clinical results are presented.

3. Symptomatic response was excellent and there were no toxic manifestations of note.

4. The encouraging results shown in this series suggest further clinical trial of this drug in the hospital treatment of phlebotic processes and a final evaluation as to clinical efficacy in relation to toxicity formulated.

REFERENCES

- Collins, C. G., MacCallum, E. A., Nelson, E. W., Weinstein, B. B., and Collins, J. H.: *Surgery* 30:298, 1951.
- Collins, C. G., Ayres, W. B.: *Surgery* 30:319, 1951.
- Collins, C. G., and others: *Surgery* 31:528, 1952.
- Stein, I. D., and Rose, A. O.: *Arch. Int. Med.* 93:899, 1954.
- Stein, I. D., and Rose, A. O.: *Circulation* 12:833, 1955.
- Kuzell, W. C. and Schaffarzik, R. W.: *Bull. Rheum. Dis.* 3:41, 1952.
- Kidd, E. G., and Freyberg, R. H.: *Ann. Rheum. Dis.* 11:20, 1953.
- Brodie, B. B., and others: *Am. J. Med.* 16:181, 1954.
- Byron, C., Orenstein, H.: *New York State J. M.* 53: 676, 1953.
- Currie, J. P., Peebles Brown, R. A., and Will, G.: *Ann. Rheum. Dis.* 12:88, 1953.
- Wilhelmi, G. Schweiz: *Med. Wehnschr.* 79:577, 1949 (cited by (9)&(10)).
- Wilhelmi, G. Schweiz: *Med. Wehnschr.* 80:936, 1950 (cited by (9)&(10)).
- Domenjoz, R.: *Gen. Pract. Clin.* 105:467, 1952 (cited by (9)&(10)).
- Steinbrocker, O., and others: *J.A.M.A.* 150:1087, 1952.
- Bunim, J. J., Sokoluff, L., Williams, R. R., and Black, R. L.: *Ann. Chron. Dis.* 1:178, 1955.
- Kuzell, W. C., and others: *Am. J. Med.* 16:212, 1954.
- Kuzell, W. C., Schaffarzik, R. W., Naugler, E. W., and Champlin, R. M.: *New England J. Med.* 256:388, 1957.
- Kuzell, W. C. and Schaffarzik, R. W.: *California Med.* 77:319, 1952.
- Kuzell, W. C. and Schaffarzik, R. W.: *J.A.M.A.* 149:729, 1952.
- Stephens, C. A. and others: *J.A.M.A.* 150:1084, 1952.
- Davies, H. R., Barter, R. W., Gee, A., Hiron, C.: *Brit. M. J.* 2:1392, 1952.
- Granirer, L. W.: *J.A.M.A.* 150:1332, 1952.
- Rottino, A., Joffe, A., Hoffman, G.: *A.M.A. Arch. Int. Med.* 93:561, 1954.
- Bichel, J.: *J.A.M.A.* 161:1095, 1956.
- Kalliomaki, L.: *J.A.M.A.* 161:103 (ab) 1956.
- Fleming, J., and Will, G.: *Ann. Rheum. Dis.* 12:95, 1953.
- Farinos, E. C., and Zozaya, G.: *J.A.M.A.* 161:1706 (ab) 1956.
- Fishman, H. C., Reynolds, J.: *J.A.M.A.* 153:642, 1953.
- Charet, R. and Siegle, I.: *J.A.M.A.* 151:556, 1953.
- Stifel, J. and Burnheimer, J. C.: *J.A.M.A.* 151:555, 1953.

* Our thanks to Dr. Ambrose H. Storck for the use of one of his patients in this series.

31. Hinz, Carl: J.A.M.A. 151:38, 1953.
32. Bershof, E. and Oxman, A.: J.A.M.A. 151:557, 1953.
33. Werblow, S. C., and Neber J.: J.A.M.A. 151:1286, 1953.
34. Brandwein, S.: New York State J. Med. 53:1577, 1953.
35. Kranin, P.: J.A.M.A. 152:31, 1952.
36. Raffensperger, E. C.: J.A.M.A. 152:30, 1953.
37. Shields, W. E., Adamson, N. E., MacGregor, J. B.: J.A.M.A. 152:28, 1953.
38. Steinbrocker, O.: J.A.M.A. 151:143, 1953.
39. Nassim, J. R.: Brit. M. J., 1:1310, 1953.
40. "Foreign Letters"—J.A.M.A. 161:173, 1956.
41. Dilling, N. V.: Lancet 1:1230, 1953.
42. "Medico-Legal Notes" Brit. M. J. 2:1427, 1952.
43. Steinberg, C. I., Bohrod, M. G., and Roodenburg, A. L.: J.A.M.A. 152:33, 1953.
44. Etess, A. D., and Jacobson, A. S.: J.A.M.A. 151:639, 1953.
45. "Medicine and the Law", Lancet. 1:192, 1953.
46. Benstead, J. G.: Brit. M. J., 1:711, 1953.
47. Leonard, J. C.: Brit. M. J., 1:1311, 1953.
48. O'Brian, D. J., and Storey, G.: Brit. M. J., 1:792, 1954.
49. Nathan, D. A., Meltus, M. L., Capland, L., and Lev, M.: Ann. Int. Med. 39:1096, 1953.

DIAGNOSIS AND TREATMENT OF PARTHENIUM DERMATITIS *

HENRY D. OGDEN, M.D.
NEW ORLEANS

Contact dermatitis due to sensitization to members of the Rhus family (poison ivy and oak) has long been recognized. While this plant is known to be highly antigenic, it is not sufficiently emphasized that many other plants frequently produce sensitization. A common mistake is to classify individuals with plant dermatitis with the rather vague diagnosis of "poison ivy." The skin lesions in plant dermatitis are not ordinarily morphologically different unless the exposure is mainly in one particular area, such as a housewife who has dermatitis of the hands due to contact with some plant used in cooking. The fact that other plants may be etiologically incriminated explains immediately the poor therapeutic results obtained from hyposensitization in many cases of "poison ivy" when patch tests are not done.

Patch testing should not be attempted until the acute phase of the dermatitis has subsided. Until recently one had to rely mainly on ointments, lotions, etc. for symptomatic relief. The advent of the corticosteroid hormones has facilitated

easier handling of the acute phase. Topical therapy or hormone therapy may be used together or separately.

The purpose of this presentation is to emphasize the need to patch test for possible sensitization to other plants, including *Parthenium hysterophorus*, as a common cause of dermatitis. This plant which resembles ragweed is ubiquitous in many parts of the country especially in the South. It is very common in Louisiana, and frequently grows in vacant lots and by the side of roads. It is also called "feverfew".



CASE REPORTS

C. B. S., male, forty-four years old, dairy employee, had a generalized dermatitis of long standing which improved when he left home or work, or was hospitalized in Charity Hospital. In spite of treatment the skin lesions would always reappear when he returned home. Patch testing revealed a very strong reaction to the parthenium leaf. Hyposensitization was begun with alcoholic extract of parthenium and he was instructed to avoid all contact with the plant. Improvement was satisfactory and he did not have any recurrence as long as he remained under our supervision in New Orleans.

Mrs. G. B., female, twenty-nine year old housewife, who lives in a suburban area of New Orleans,

* From the Department of Medicine, Louisiana State University, School of Medicine, New Orleans.

had a history of recurrent dermatitis for most of her life. Routine dermatologic treatment gave temporary relief. Her lesions were on exposed areas such as hands, arms, legs, and feet. Respiratory allergy was also present. A positive patch test was obtained with parthenium and hyposensitization was then commenced. In addition, she was also treated with extracts of house dust, giant and short ragweed and true marsh elder. Excellent therapeutic results were obtained with this routine.

A. L., male, fifty-two year old truck driver from rural Louisiana, had dermatitis mainly on exposed areas, although lesions were present on the thighs. Previous treatment gave only temporary relief. This patient showed a positive parthenium patch test. Hyposensitization with parthenium extract has relieved symptoms to a great degree, and no additional medication is now needed.

R. L. D. male, thirty-four year old truck driver from rural Louisiana, had a history of dermatitis of seven years' duration. The dermatitis at times appeared all over the body, but was mainly localized on the hands. Routine dermatological treatment gave little help, necessitating prednisone for several months. He gave a positive reaction to parthenium extract. There was also a history suggestive of bronchial asthma. He gave a positive skin test reaction to house dust, and was treated with this extract in addition to alcoholic extract of parthenium. He has improved during hyposensitization; however, minor lesions have continued on the hands, which made it necessary to continue prednisone. It must be pointed out that it is impossible for him to completely avoid contacts with this plant during his daily work.

It is proper to point out that contact with an offending plant may not be recognized by the patient. Exposure may be through some unsuspected object, such as a dog which has been in contact with the offending plant, wet clothes on an outdoor line may be impregnated with particles of the plant which have been carried by the wind, etc. Contacts of this type are difficult to trace or appreciate.

The following case histories illustrate prompt symptomatic relief which was obtained in cases of acute allergic dermatitis.

Mrs. R. D., female, forty-nine year old clerical worker. This patient had a history of acute dermatitis for one week prior to her first visit. Lesions were mainly on the wrists, neck, ankles and legs. She suspected sensitization to poison ivy. Forty units of cortrophin-zinc were given to her on her first visit and repeated the following day.

By the third day the lesions had greatly improved. It will now be necessary to make a specific diagnosis, (by patch testing) to be probably followed by hyposensitization.

Mrs. E. A., a fifty-six year old female clerical worker, had recurrent lesions the distribution of which resembled atopic dermatitis. Urticarial wheals were also present at times. She had not been relieved by various medications including PBZ, intravenous calcium gluconate, prednisone, etc. Forty units of cortrophin-zinc were given and repeated in forty-eight hours and marked improvement occurred after the second injection. Three more injections of cortrophin-zinc were given with continued improvement. Allergy work-up is yet to be completed on this patient.

Cortrophin-zinc, which contains 40 units of ACTH per cc., has proved to be an effective agent for symptomatic relief. It is easy to administer, may be given with a small gauge needle, and its effects are relatively long-lasting.

SUMMARY

1. So called "poison ivy" dermatitis may be due to allergy to other plants.

2. *Parthenium hysterophorus* sensitization has been found to be a common cause of contact dermatitis of the plant type.

3. ACTH has been found to be of help in obtaining rapid symptomatic relief in allergic dermatitis.

4. In plant dermatitis the specific etiological factor involved must be isolated at a later date by means of patch testing.

USE OF THE ATARACTICS IN MENTAL ILLNESS *

FREDERICK R. HINE, M.D.
MANDENVILLE

INTRODUCTION

At a psychopharmacology conference held last year in Washington a favorite corridor anecdote dealt with some advice said to have been given by Nolan D. C. Lewis, a very well known psychiatrist, to a group of younger colleagues and students. When asked for his opinion of the newer psychiatric drugs, Dr. Lewis is reported to have said, "Better use 'em quickly, boys, while they still work."

* Presented at the Seventy-seventh Annual Meeting of the Louisiana State Medical Society, May 8, 1957, New Orleans.

The cycle of enthusiasm, followed by skepticism, followed by sober evaluation through which a new treatment method goes is widely recognized. The present writer and a number of his co-workers have admittedly entered the second phase, that of doubt and suspicion. The views which follow, then, represent current opinion and are subject to revision and correction in the final phase of the cycle.

CLINICAL IMPRESSIONS

The first portion of this report contains: clinical impressions regarding a number of drugs of special interest to psychiatry, personal impressions of the writer and of other members of the psychiatric staffs of the Louisiana state hospitals. Informal conversations during the course of work as coordinator of a drug research program, still underway, have yielded many opinions and, in addition, responses to a formal questionnaire have been used.

One clinical impression is particularly outstanding. Every physician responding to our questionnaire uses chlorpromazine (Thorazine) more frequently than any other psychopharmacologic agent. Most report that their use of this compound has increased markedly over the past year, often with a corresponding decrease in the use of other drugs. Figure 1 shows

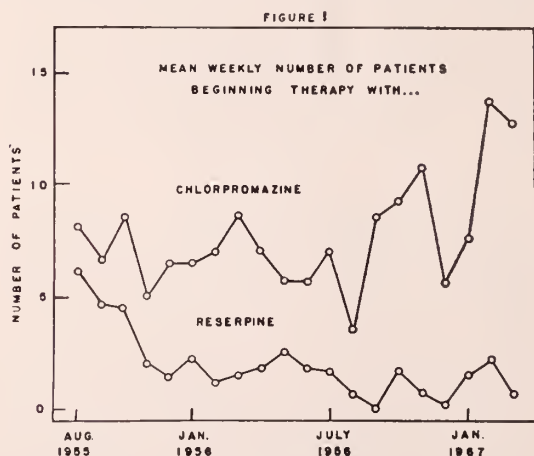


Figure 1

this trend at the Southeast Louisiana Hospital. It will be seen that during late 1955 chlorpromazine and reserpine were competing for popularity. During late

1956 and early 1957, however, it is clear that chlorpromazine is far and away the outstanding choice. The preference for chlorpromazine is sufficiently great on the part of certain physicians that they report the conviction that it is the only psychopharmacologic agent which, in their experience, exerts any significant desirable effects other than those attributable to suggestion.

As implied above, opinions about most of the other compounds are considerably more varied. The use of reserpine (Serpasil, Sandril) has definitely diminished. For a time there was considerable opinion that reserpine was equally as effective as chlorpromazine but merely slower and less dramatic in its action. In recent months this idea has been expressed less often and one hears increasing doubt regarding the real value of this compound for modifying psychiatric symptoms. Meprobamate (Equanil, Miltown) has been rather extensively used. It has, of course, been recommended chiefly for the milder, less severely disturbed patient with moderate anxiety and tension. Impressions would certainly agree that it is ineffective in more severe agitation. Impressions regarding its usefulness even in those patients for which it is specifically recommended vary, however. It must be said that there is increasing doubt as to its effectiveness. Promazine (Sparine), a relatively recent introduction, is currently enjoying some popularity as a substitute for chlorpromazine in cases where that drug proves toxic or ineffective. It is generally agreed, however, that promazine is a second choice to chlorpromazine and doubts about its efficacy are frequently heard. Experience with a number of the still newer ataractics is much too limited to justify individual reports. I refer to such compounds as mepazine (Pacatal), ectylurea (Nostyn), hydroxyzine (Atarax), phenaglycodal (Ultran), and prochlorperazine (Compazine). However it may be said that no enthusiasm for any of these compounds, with the possible exception of prochlorperazine, has been ex-

pressed by the physicians whose impressions are included in this study.

We may take a moment to discuss several compounds which are not, strictly speaking ataractics: azacylonal (Frenquel), pipradol (Meratran) and methylphenidylacetate (Ritalin). Of these Ritalin is being rather extensively used, particularly at the Central Louisiana State Hospital and particularly in combination with chlorpromazine, for the relief of depression. Others report considerably less success with this drug. On the basis of very limited experience, the remaining compounds in this group have not aroused any noticeable enthusiasm. At the Southeast Louisiana Hospital, under the direction of Dr. Frank Ervin, we have currently under investigation a new, experimental drug not yet released by the McNeil Laboratories of Philadelphia. This compound, in a very few cases, has seemed to be sufficiently effective in relieving depression to warrant its further study.

With regard to the dosage levels in common use we find a distinct trend toward the use of larger doses. This is particularly true in the administration of chlorpromazine which is now commonly prescribed in doses up to 2400 mg. per day. Many of the physicians reporting indicate that they have had numerous cases which failed to respond to lower doses of this drug but which showed improvement after the dosage level was increased. It is felt that reluctance on the part of physicians in the community to use these larger doses may occasionally result in the unnecessary commitment of patients who could be successfully treated at home. As with any drug, adequate dosage is of the greatest importance.

The matter of reluctance to use higher doses, particularly of chlorpromazine, leads immediately to a consideration of the toxicity of this drug. First of all it may be said without hesitation that chlorpromazine is the most toxic of the compounds under consideration. Nevertheless, we have had no fatalities with this drug and, at the Southeast Louisiana Hospital,

no cases of jaundice or agranulocytosis, its two most dreaded complications. The other hospitals have reported a number of chlorpromazine-treated cases which developed reversible clinical jaundice. Another side-effect of chlorpromazine therapy is a Parkinsonian-like syndrome which can at times be quite troublesome to the patient but usually responds to treatment with Artane and does not usually necessitate termination of therapy. Similarly, urticarial rashes, often combined with extreme photosensitivity, have frequently been observed in our chlorpromazine-treated cases but usually respond to topical medication and some modification of activity. Only rarely has it been necessary to discontinue therapy because of skin eruptions. Hypotensive reactions with falling and fainting occur occasionally during the initial days of chlorpromazine therapy and are adequately managed by a few days of bed rest. Nasal congestion, dryness of the mouth, diarrhea and constipation are occasionally seen but respond well to general measures and are not considered of special importance. There is one side-effect of chlorpromazine therapy which requires particular mention. This is a reaction consisting of increased agitation and apprehension on the part of the patient, usually experienced within the early weeks of therapy and often described by the patient as a jittery feeling or just 'being scared'. Mild to moderate exacerbations of depressive tendencies sometimes occur. Occasionally tremors are seen. The patient usually attributes these symptoms to the medication and frequently demands its discontinuation. Depending upon individual considerations we have discontinued the drug or attempted to continue medication on through this period, which is usually transitory.

Reserpine is the only other compound in this group with significant toxicity and it is considerably less toxic than chlorpromazine. The two drugs share the tendency to produce hypotensive reactions, Parkinsonian-like syndromes and mild depression. Both drugs also often produce peri-

ods of drowsiness and lethargy but these are usually transitory and do not usually require discontinuation of therapy.

We have felt that the toxic reactions observed by us and reported in the literature, while in no sense a deterrent to the employment of these drugs in adequate doses, do necessitate routine, periodic laboratory examinations of the blood, for hematopoietic inhibition, and the urine, for retention of bile and bilirubin.

With regard to the specific areas of efficacy of the ataractic drugs, and I shall speak particularly of chlorpromazine, it is generally agreed that, when effective, they do have a calmative, tranquilizing effect on patients with distinct psychomotor hyperactivity and anxiety. In addition they often seem to enable the disorganized, incoherent patient, with or without delusional ideation and hallucinations, to reintegrate his mental processes. There is some opinion that this latter effect may be secondary to the lessening of anxiety and hyperactivity and the fact that the patient becomes thereby more accessible to stimuli from his environment and contact with his therapists. There is some evidence, however, that the facilitation of reintegration occurs even in withdrawn and emotionally flattened patients who do not show overt anxiety as a part of their presenting picture.

It is our opinion that the drugs do not cure schizophrenia or any other mental illness but sometimes relieve certain of the distressing symptoms which might otherwise cause the patient to be involved in a descending spiral of disorganization and eventual deterioration. By relieving these symptoms they render the patient more accessible to his environment and to other forms of therapy, and permit the utilization of his own natural recuperative powers. The importance of emotional support for the eventual adjustment of a patient 'coming out' of a psychotic state, whether this remission be aided by drugs or not, cannot be overemphasized. Without question the use of these drugs reduces greatly the need for other symptomatic

therapies such as ECT and insulin. In a great many instances the "social milieu" of the ward is improved.

Opinions differ as to the eventual place of the psychopharmacologic agents. At present we believe that the ataractic drugs will probably find a definite *but distinctly limited* place in hospital psychiatry. We predict that they will eventually be assigned their proper niche as one of many types of symptomatic therapy.

A STUDY OF CHANGES IN PSYCHIATRIC STATUS

I should like now to turn briefly to a very simple and in many ways inadequate study which was done during the period from August 1955 to June 1956, in the Louisiana State Hospital System. All patients receiving reserpine or chlorpromazine during this period received an initial, pretreatment rating of psychiatric impairment on a five point scale (none, minimal, mild, moderate, severe) and a final psychiatric rating at the time of exit from the hospital or at the end of the period of study.

There were a number of grave defects in this study. No provision could be made for control. Only a single pretreatment and a single post-treatment rating were obtained so that there was no possibility of determining an interrater reliability. The ratings were made by different observers with no background of agreement on the definitions of the various terms. Courses of therapy varied widely. There was neither a single fixed-dose or fixed-length course nor were there uniform criteria for the regulation of doses and lengths of treatment based on individual patient-responses to the drugs. For these reasons, and because of a number of specific difficulties which arose in carrying out the research, the results to be reported must be considered of a very preliminary and tentative nature. This study is now being repeated with an effort to eliminate many of the defects inherent in the previous research. Nevertheless we feel that the results are of sufficient interest that they may be briefly reported here.

Figure 2 summarizes the results of the

early study. Results with chlorpromazine and reserpine are reported separately. The striking finding shown in this graph is the fact that a very large percentage of the patients (44.9 for chlorpromazine and 70.5 for reserpine) showed no improvement whatever and that, among those patients showing improvement, by far the majority showed only one-step improvement, i.e. from severe to moderate, moder-

ate to mild, mild to minimal, or minimal to none. Inspection of the graph shows that the number of patients showing "two-step" or greater improvement is very small. Stated in another way, these results show that only an infinitesimally small number of patients receiving the drugs showed improvement to the minimal or none levels of psychiatric impairment indicative of a complete remission or recovery. We feel that insofar as these results are valid and subject to our ability to repeat the experiment under more rigid conditions, this study supports our clinical impression that the ataractic compounds are not miracle drugs and do not, in themselves, even produce complete remissions in most cases but rather relieve a small portion of the patient's symptoms.

This point is emphasized not to disparage the value of symptomatic relief in medical therapy but to discourage the overconfident use of these compounds with the consequent neglect of other forms of psychiatric therapy now available and the neglect of research along other lines.

FIGURE II—IMPROVEMENT IN PSYCHIATRIC STATUS OF PATIENTS RECEIVING DRUGS

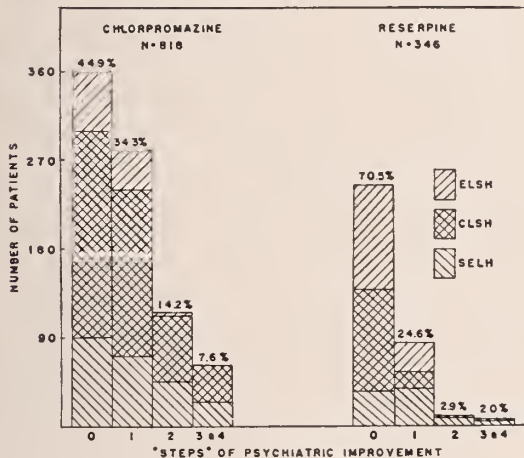


Figure 2

The Journal of the Louisiana State Medical Society

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PREGNANCY, GLYCOSURIA, AND DIABETES

Glycosuria is never trivial, and when it is found in pregnancy the need for proper explanation and appropriate handling is pressing.

The identification of its cause is not simple for it is not due to lactose, which appears only during lactation. Glycosuria developing for the first time in a woman who has become pregnant is probably not benign. Glycosuria in a pregnant woman is more difficult of interpretation than in the nonpregnant individual because pregnancy lowers the renal threshold for sug-

ar and allows the appearance of sugar in the urine under a variety of conditions. Among these are some which the pregnancy itself may cause to become urgent.

The concept of a renal threshold for the excretion of sugar in the urine is a convenient basis for considering the various forms of glycosuria. It is the concentration of sugar in the blood which must be reached for abnormal amounts of sugar to appear in the urine, and is generally considered to be 140 to 160 mg. per 100 ml. whole blood and 170 mg. per 100 ml. for plasma. It is thought that a rigid barrier does not exist but that the "threshold" is the end result of glomerular filtration, on the one hand, and tubular reabsorption on the other. This value will be influenced by many factors—one of which is pregnancy. It has been considered that the pituitary influence is responsible for lowering the threshold in pregnancy.

The least threatening of these conditions in pregnancy is renal glycosuria, which may be found in 10 to 15 per cent of normal pregnant women as the result of lowering of the renal threshold for sugar and allowing glucose to escape in the urine. The renal threshold for glucose returns to normal after the lactation period is ended. Renal glycosuria is not a forerunner of diabetes. Its presence is identified by the determination of two blood sugars an hour apart, and the determination of the urine sugar midway between. If the blood sugars are normal and the urine shows significant sugar, renal glycosuria is demonstrated. The blood sugars of a glucose tolerance test are normal in the nondiabetic patient having renal glycosuria.

The lowering of the threshold for sugar in the pregnant state is of importance in other respects. One of these is that pregnancy may raise subclinical signs of prediabetes to the clinical level. Following the discovery of glycosuria in a pregnant woman, dependence should not be placed on the determination of a single blood sugar. During pregnancy the fasting blood sugar level is 10 to 20 mg. lower than it is in the nonpregnant woman. A single

blood sugar determination, therefore, may be misinterpreted as renal glycosuria of pregnancy. In such a situation a glucose tolerance determination is necessary, and this should be repeated in each trimester of the pregnancy.

Large sized infants are common in pre-diabetic pregnancy, which may also be complicated by high incidence of stillbirths, premature deliveries, hydramnios, and toxemias. These abnormalities may occur many years before clinical diabetes is manifest. The mother of a newborn weighing over ten pounds should have glucose tolerance test. The prediabetic glucose tolerance abnormality frequently disappears within forty-eight hours of delivery. Moss¹ states that in the postpartum period one-third of these mothers, however, will still have diabetic glucose tolerance curves, but if they are tested during the middle third of a subsequent pregnancy the majority will have decreased carbohydrate tolerance. He also states that if the husbands of the nondiabetic mothers of large babies are tested approximately one sixth will have diabetes.

Another situation in which the lowering of the renal threshold for sugar in pregnancy is of great clinical importance is the production of renal glycosuria in the established diabetic. In this condition, renal glycosuria causes serious difficulty in the management of the diabetes during pregnancy. Perkoff and Tyler² have reported observations on ten diabetic pa-

tients, among whom five exhibited renal glycosuria. This led to severe hypoglycemic episodes, and subsequently contributed to the occurrence of ketosis in three of these patients.

There are various theories about what may contribute to the well known readiness with which pregnant diabetics become ketotic. Among these, it is reasonable to expect that when the pregnant diabetic develops renal glycosuria, rapid loss of glucose in the urine would be conducive to ketosis and acidosis.

Before the advent of the insulin era, pregnancy in the diabetic patient was not a clinical problem for many months because of abortions. Now, among the hundred thousand women of child bearing age in this country it is expected that about ten thousand will become pregnant. Among these thousands and among the vast number of pregnant women who will show glycosuria, the clinical problem of identification of its cause is of pressing importance. In each of these its clarification will become possible through the use of the glucose tolerance test. The criteria for the recognition of diabetes or renal glycosuria, or both, are the same in the pregnant and in the nonpregnant patient.

¹ Moss, James M.: Diagnosis of diabetes mellitus, J. Student A.M.A. 4:19 (February) 1955.

² Perkoff, G. T., and Tyler F. H.: Renal glycosuria in pregnant diabetic patients, Arch. Int. Med. 97: 758, 1956.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

SCIENTIFIC PROGRAM 1958 ANNUAL MEETING

Listed below are chairmen of the various scientific sections for the 1958 Annual Meeting which will be held in Shreveport, May 5-7. Members who are desirous of presenting papers at this meeting should promptly contact the chairman of the respective section before which they wish to appear since plans for the program are being formulated at this time, and preference is

given in order of requests received.

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Surgery—Dr. Paul D. Abramson, Shreveport

Urology—Dr. John G. Menville, New Orleans

IMPORTANT

Both volumes of the Rudolph Matas History of Medicine in Louisiana have been available for several months. The Committee had 2000 copies of Volumes I and II printed.

Up to the present time only 188 copies of Volume I and 173 copies of Volume II, have been purchased by members of the State Society. The number of volumes printed was based on the approximate membership of the State Society, and the cost for each volume is \$5.00 plus tax. Remittance should be sent to J. A. Majors Company, 1301 Tulane Avenue.

The Committee was hopeful that the response would be much greater than it has been.

The entire expense for editing and publishing of the Rudolph Matas History of the Louisiana State Medical Society was borne by a Trust Fund which was created by Dr. Matas.

None of the volumes have been offered for sale outside of the profession up to the present time. If the profession does not avail itself of the opportunity it will be necessary for the Trust Fund Committee to offer these books for sale to the public.

It is our hope that the members of our Society will forward their orders for these volumes without delay, as we feel every member of our organization should have a copy of these volumes.

Dr. Isidore Cohn, Chairman

Rudolph Matas Trust Fund Committee

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1957 - 1958

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SCIENTIFIC WORK

C. Grenes Cole, M. D., Chairman; Sam Hobson, M. D.; both of New Orleans; M. D. Hargrove, M. D., Shreveport.

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M. L. Michel, Jr., M.D., Chairman, New Orleans; F. W. Raggio, M.D., Lake Charles; Luke Marcello, M.D., Deridder.

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LIAISON COMMITTEE — PUBLIC POLICY & LEGISLATION AND CONGRESSIONAL COMMITTEES

H. W. Richmond, M.D., Oakdale; E. L. Zander, M.D., New Orleans.

LOUISIANA ORGANIZATIONS FOR STATE LEGISLATION

Daniel J. Fourrier, M.D., Chairman; Wiley A. Dial, M.D.; Gordon W. Peek, M.D.; all of Baton Rouge; M. C. Wiginton, M.D., Hammond; Leo J. Kerne, M.D., Thibodaux; B. E. Trichel, M.D., Shreveport; J. F. Gladney, M.D., Homer; E. L. Carroll, M.D., Columbia; H. W. Richmond, M.D., Oakdale; J. T. Willis, M.D., Alexandria; Rafael C. Sanchez, M.D.; C. Grenes Cole, M.D.; both of New Orleans.

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MENTAL HEALTH

Frederic W. Brewer, M.D., Chairman, New Orleans; Justillien H. Foret, M.D., New Orleans; D. H. Duncan, M.D., Shreveport.

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Moss M. Bannerman, M.D., Chairman; Charles Mosely, M.D.; both of Baton Rouge; Henson S. Coon, M.D., Monroe; W. A. Ellender, M.D., Houma; J. A. Hendrick, Jr., M.D., Shreveport; Charles B. Odom, M.D.; E. J. Joubert, Jr., M.D., both of New Orleans; S. F. Fraser, M.D., Many; E. P. Breaux, M.D., Lafayette; P. C. Shute, Jr., M.D., Opelousas; H. H. Hardy, Jr., M.D., Alexandria.

NEUROPSYCHIATRIC SERVICE AT CHARITY HOSPITALS

P. H. Jones, M.D., Chairman; John W. Bick, Jr., M.D.; both of New Orleans; E. M. Robards, M.D., Gurley; Arthur L. Seale, M.D., Pineville.

NOMINATIONS (COMMITTEES TO BE ELECTED AT 1958 ANNUAL MEETING)

E. L. Leckert, M.D., Chairman, New Orleans; C. M. Horton, M.D., Franklin; Ralph H. Riggs, M.D., Shreveport.

PUBLIC HEALTH OF THE STATE OF LOUISIANA

B. J. DeLaurel, M.D., Chairman; W. P. Gardiner, M.D.; W. J. Rein, M.D.; all of New Orleans; B. E. Spencer, M.D., Sterlington; S. J. Phillips, M.D., Thibodaux; G. Vasquez, M.D., Lake Charles; James Welch, M.D., Alexandria; K. M. Lyons, M.D., Sulphur.

RURAL AND URBAN HEALTH

J. P. Sanders, M.D., Chairman, Shreveport; J. T. Cappel, M.D., Alexandria; B. F. Mancuso, M.D., New Orleans; E. L. Carroll, M.D., Columbia; Guy R. Jones, M.D., Lockport; M. C. Wiginton, M.D., Hammond; Barclay Funk, M.D., Lake Charles.

STATE HOSPITAL POLICIES

W. E. Barker, Jr., M.D., Chairman, Plaquemine; George W. Wright, Jr., M.D., Monroe; T. A. Kimbrough, M.D.,

Lafayette; P. H. Jones, M.D.; Charles B. Odom, M.D.; both of New Orleans; B. E. Trichel, M.D., Shreveport; E. L. Zander, M.D., New Orleans.

WOMAN'S AUXILIARY (ADVISORY COMMITTEE)

Walter Moss, M.D., Chairman, Lake Charles; E. L. Leckert, M.D.; E. L. Zander, M.D.; C. Grenes Cole, M.D.; H. Ashton Thomas, M.D. (Pres. LSMS) ex-officio; all of New Orleans.

COUNCIL ON MEDICAL SERVICE AND PUBLIC RELATIONS

W. Robyn Hardy, M.D., Chairman; J. Theo Brierre, M.D., Vice-Chairman; Dan D. Baker, M.D.; all of New Orleans; I. W. Gajan, M.D., New Iberia; T. B. Tooke, M.D., Shreveport; Henson S. Coon, M.D., Monroe; D. J. Fourrier, M.D., Baton Rouge; T. H. DeLaurel, M.D., Lake Charles; O. B. Owens, M.D., Alexandria.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

GASTROENTEROLOGICAL CONVENTION

The 22nd Annual Convention of the American College of Gastroenterology will be held at The Somerset in Boston, Mass., on October 21, 22, 23.

In addition to the many individual papers to be presented, there will be panel discussions on Chronic Ulcerative Colitis, Diseases of the Esophagus, Peptic Ulcer and the Management of Massive Gastrointestinal Hemorrhage in Patients with Liver Diseases. There will again be scientific as well as commercial exhibits and the sessions will be open to all physicians without charge.

On October 24, 25 and 26, immediately following the Convention, Dr. Owen H. Wangenstein of Minneapolis, Minn. and Dr. I. Snapper of Brooklyn, N. Y., will again be the moderators of the Annual Course in Postgraduate Gastroenterology. The sessions will be held at The Somerset and in the Joslin Auditorium of the New England Deaconess Hospital. Attendance at the Course will be limited to those who have registered in advance.

This year marks the Twenty-Fifth Anniversary Year of the College and silver certificates are to be presented to those who have been affiliated with the organization since its inception.

Honorary Fellowships are to be presented to Dr. Chester S. Keefer, Boston, Mass., Dr. William W. Frye, New Orleans, La., Dr. Stafford L. Warren and Dr. Rafe C. Chaffin, both of Los Angeles, Calif.

Copies of the program and further information

concerning the Postgraduate Course may be obtained by writing to: American College of Gastroenterology, 33 West 60th St., New York 23, N. Y.

FORESEE RELIEF FOR REACTIONS TO PENICILLIN

Relief from adverse penicillin reactions, estimated to affect a minimum of 600,000 persons annually, may be available before the end of this year.

Two Midwest physicians, in papers presented at the American Medical Association Convention, reported highly successful results in the treatment of penicillin reactions by the injection of a newly developed penicillinase. Capt. G. M. Davis, Medical Corps, U. S. Navy, of Great Lakes Naval Training Station, and Dr. R. M. Becker of Madison, Wis. each reported that, in a significant number of clinical tests, allergic manifestations of penicillin reactions promptly receded following the injection of penicillinase.

Dramatic relief occurred within a period ranging from a few hours up to 24 hours and most patients had complete freedom from itching and swelling in 24 to 72 hours, they reported. An additional advantage of the new therapy is the absence of recurrence of symptoms even when other supportive therapy is stopped.

For these reasons, Dr. Becker told his A.M.A. audience, "penicillinase should be kept on hand

in every doctor's office or hospital where penicillin is administered."

ASPIRIN LESSENS REBOUND EFFECTS OF CORTISONE

Patients with rheumatic fever should be given aspirin to reduce rebound effects that occur when cortisone or related steroid hormones must be discontinued.

Dr. Edward E. Fischel, director of medicine at The Bronx Hospital, New York City, recently gave results of a study of combined use of aspirin and the hormones, cortisone, hydrocortisone and prednisone. The report was made at the 9th International Congress on Rheumatic Diseases, June 23-28, attended by more than 1,000 rheumatologists from 44 countries.

"When hormone therapy was stopped and aspirin therapy continued, no increase occurred in the severity of the rheumatic symptoms," Dr. Fischel's paper noted. "We were then able to continue the aspirin for a long period of time in an attempt to keep rheumatic activity suppressed."

Combined use of aspirin with cortisone, or the other steroids, was necessary because the rebound that often happens following withdrawal of these hormones "is not always mild," Dr. Fischel said.

POLIO VACCINE FOR HERPES SIMPLEX

Poliomyelitis vaccination may be of some value in the future treatment of recurrent herpes simplex, report Drs. Leon Adoni and Donald N. Tschan, Department of Dermatology, Temple University Medical Center. One man, 25, with a history of repeated attacks of herpes simplex since childhood, has had no recurrence of his fever blisters since the accidental ingestion and swallowing of liquid cultures of the three types of polio virus. Another man, 20, has had no recurrence of fever blisters since he was given two standard injections of vaccine during the summer of 1956. — Correspondence, *J.A.M.A.*, May 11, 1957.

YOUNG ADULTS AS WELL AS OLD NEED PROCTOSIGMOIDOSCOPIES

Proctosigmoidoscopy should be included as part of the routine physical examination of young adults as well as those above 35 or 40, according to three U. S. Air Force physicians who examined 500 subjects at the 3700th USAF Hospital, San Antonio, Tex. The 500 males ranged in age from 17 to 25. They were completely asymptomatic.

The investigators discovered that eight subjects had rectal polyps, and two had multiple polyps. Although all the polyps were benign, the physicians agree with others that "the be-

nign adenomatous polyp of the rectum and rectosigmoid is a precancerous lesion." They "urge strongly that proctosigmoidoscopy be included in the complete physical examination of all patients."

In preparing for the 500 sigmoidoscopies, two kinds of enemas were given. Isotonic saline enemas were used with 112 subjects, but since "usually two enemas were required," the process was found to be "time-consuming, often technically difficult," and frequently there was a failure "due to lack of cooperation." The physicians then adopted the Fleet Enema Disposable Unit.

Administered to 388 patients 10 to 60 minutes prior to examination, the Fleet Enema (a 135 cc. packaged enema containing in each 100 cc., 16 gm. sodium biphosphate and 6 gm. sodium phosphate) "resulted almost always in a clean field making adequate examination quick as well as easy."

(Abbot, F. K., Monroe, L. S., and Spencer, F. M.: The incidence of polyps in 500 proctosigmoidoscopies in asymptomatic young men. *Gastroenterology* 32:704 (Apr.) 1957.)

RESEARCHERS NOTE EXCEPTION TO BIOLOGICAL LAW

A biological law which says that the living body always refuses to produce antibodies against itself—although it does produce them against substances from outside—may have an exception.

Evidence that chronic inflammation of the thyroid gland is caused by this exception to the rule was reported in the July 27 *Journal of the American Medical Association* by Dr. Ernest Witebsky and associates of the University of Buffalo School of Medicine and Buffalo General Hospital.

Their findings and method of study might also reveal the mechanism behind other diseases suspected, but not proved, to occur in the same way, they said. These include certain diseases of the blood known as dyscrasias (such as hemolytic anemia, in which red blood cells are destroyed).

The researchers explained that for many years only "foreign" substances from other species were considered as real producers of antibodies (materials in the blood which act against other substances, as polio antibodies act against polio virus). For instance, horse serum stimulates antibody production when injected into humans, but not horses. This is the basis for using animal serum against human diseases like smallpox.

Although research has indicated it is possible for antibodies to appear which are directed against members of the same species, there has

been no proof that this might occur within the same individual.

Now, however, Dr. Witebsky and associates have reported evidence that extract from the thyroid gland can produce this antibody effect "within the same species and even within the same individual under certain experimental conditions."

They succeeded in producing autoantibodies (antibodies against the self) in dogs, rabbits, and guinea pigs by injecting them with their own thyroid extract. The material which apparently caused the reaction was thyroglobulin, a material known to contain antithyroid substances. They also discovered that injections produced considerable damage to the cell structure of the animals' thyroid glands.

POSTMORTEM CHANGES CONFUSE BLOOD ALCOHOL TESTS

Because alcohol may diffuse out of the stomach after death, special care must be taken in measuring alcohol levels in the blood during autopsy. Blood alcohol levels are commonly determined by taking blood from the sac surrounding the heart during autopsy, Drs. Henry W. Turkel and Houghton Gifford said in the July 6 Journal of the American Medical Association.

However, they have discovered that the alcohol level of blood in this pericardial sac is frequently higher than the level in the femoral vessels of the abdomen and legs. This happens because alcohol ingested just before death diffuses out of the stomach into the nearby areas after death, they said. The postmortem diffusion process does not extend as far as the femoral vessels.

Knowledge of the blood alcohol level at the time of death is frequently very important in criminal or civil court proceedings. Because of the "gravity of decisions" attached to these determinations, they must be accurate, the authors said.

Since determinations made from blood drawn from the heart area may be inaccurate, they recommended that blood from the femoral vessels be used instead.

The authors noted that these errors in measuring blood alcohol levels do not occur in examining the blood of the living, since tissue barriers are still intact and the circulating blood provides for a uniform distribution of alcohol throughout the blood stream.

Dr. Turkel is from the coroner's office of the City and County of San Francisco and Dr. Gifford is from the department of pathology, Stanford University School of Medicine.

A.M.A. COUNCIL ISSUES MEPROBAMATE WARNING

The American Medical Association's Council on Drugs today issued a warning about the potential hazards of the tranquilizing drug meprobamate (Miltown, Equanil).

The report in the July 20 Journal of the American Medical Association said the drug's extensive use since its introduction two years ago has been "based on the assumption that large doses of the drug can be administered with practically no side-effects." However, as the use has multiplied, it has become increasingly apparent that meprobamate is capable of producing "a rather wide variety of side-effects and untoward reactions."

The listing of adverse side-effects does not necessarily mean that the "usefulness of meprobamate is outweighed by its potential side-effects," the report said. It is intended to point out that side-effects and untoward reactions "can and do occur and that the drug should be administered with the same discretion" as other drugs.

Hypersensitivity reactions, including skin rashes, itching, shaking chills, and fever, have occurred with sufficient frequency to indicate that these are definite and relatively frequent complications, the report said.

There have been several reports of acute meprobamate intoxication, resulting usually from deliberate swallowing of very large amounts of the drug. None of these attempts at suicide have been successful, but alarming central nervous system symptoms have occurred.

No definite antidote or treatment for overdosage has been devised; therefore it is important to prescribe meprobamate with discretion and in small quantities, if at all, for patients who may have suicidal tendencies, the report said.

There is also evidence that meprobamate possesses habit-forming properties. Withdrawal symptoms, including convulsions, have been observed when the drug has been discontinued after long use. In addition to this physical dependence, psychological dependence with a tendency toward excessive self-medication is "undoubtedly created" in certain patients, the report said. Some patients may also need larger and larger doses to maintain the same tranquilizing effect; the chances of overdosage and acute intoxication are then appreciably increased.

Since the drug is intended primarily for those with emotional instability, the possibility of emotional complications must be recognized for intelligent use of the drug, the report said.

A variety of other side-effects, including

drowsiness, stomach and intestinal upsets, and muscular reactions, also have been noted.

VOLUNTARY HEALTH INSURANCE

The number of people in Louisiana who are covered by voluntary health insurance reached a new high by July 1, the Health Insurance Council reported. The Council estimates that about 1,250,000 persons were protected by some form of insurance designed to help pay hospital and doctor bills.

This figure, the Council said, is part of the continued growth of health insurance throughout the country, which was revealed last May in its 11th annual survey of the extent of voluntary health insurance coverage for 1956. The number of people covered by some form of health insurance in the nation today is more than 118 million, or over 70% of the U. S. civilian population.

In releasing the findings of its survey, which is based on reports of insurance programs of insurance companies, Blue Cross-Blue Shield and other health care plans, the Council went on to say that there were 1,195,000 persons covered by hospital expense insurance in Louisiana as of December 31, 1956. The total for 1955 of the number of persons covered for expenses incurred while in the hospital was 1,122,000.

Surgical expense insurance, which helps to defray the cost of physicians' charges for operations rose to 1,055,000, as compared with 929,000 the year before.

Persons protected by regular medical expense insurance, providing for doctor visits for non-surgical care, numbered 631,000 in 1956, as against the previous year's figure of 547,000.

The Health Insurance Council, which is a federation of eight insurance associations representing over 90% of the accident and health insurance business handled by insurance companies, stated that this growth reflects the desire of the people of Louisiana to help protect themselves against the cost of accident and illness.

WHAT GOOD IS THE ILO?

The May 18 issue of the A.M.A. Journal (Pages 325-328) carries a very interesting and informative article on the International Labor Organization. It was written by William L. McGrath, Cincinnati manufacturer who until recently served as the United States employer representative to the International Labor Organization governing body. The ILO membership consists of government, employer, and employee representatives.

In the Journal article, Mr. McGrath presents a strong case for the United States to withdraw entirely from the ILO.

Referring to the November, 1956, governing body meeting, Mr. McGrath said:

"The labor-government-socialist majority, now well in control, openly, triumphantly, and even jeeringly displayed their satisfaction in riding

rough-shod over the free employers and relegating free enterprise to a secondary position in the ILO."

In his "conclusions" in the Journal article, Mr. McGrath said further:

"The tripartite structure of the ILO has long since become a myth. Besides government in the government group, we now have government in the employers' group and government in the workers' group. The ILO is now to all intents and purposes an international government organization run mainly along political lines under the domination of advocates of collectivism, with free employers possessing no influence of any consequence and serving chiefly as whipping boys for the communists and the socialists. . . .

"I believe we can accomplish far more outside the organization than we can within it. As long as we stay in the ILO, we must carry its label. Do we not participate in its meetings and its findings? How can we condemn something of which we are a part? But if we withdraw from the ILO, we could label it for what it is. We could explain to the world that we are opposed to the majority philosophy of the ILO, that we do not believe in it, that we stand for free competitive enterprise instead of socialism and communism."

The Journal article and Mr. McGrath's opinions certainly confirm the good judgment of the A.M.A. House of Delegates.

HAZARD OF JET AIRCRAFT MAINTENANCE LISTED

Some of the health problems encountered in repairing and maintaining jet planes, and some preventive measures, were discussed in the June 1 Journal of the A.M.A. by two Air Force physicians.

The most hazardous of these operations is the cleaning and repair of the aircraft fuel cells. In fact, it is potentially more dangerous than cleaning bulk gasoline storage tanks, according to 1st Lieut. Americo R. Lombardi (MSC), and Capt. Arthur S. Lurie (MC).

The fuel cells of the B-47 jet bomber are rubber-lined cubicles that fill cavities within the aircraft fuselage. They are difficult to reach and allow a very small amount of working room. Since most of the cells are connected, it is often necessary to crawl from one cell into another, thus penetrating deeper into the fuselage and away from fresh air.

These "extremely poor" working conditions present a number of hazards, including fire and explosion, acute intoxication from fuel vapors, systemic poisoning from tetraethyl lead (a fuel ingredient), skin reactions from direct contact with petroleum hydrocarbons, and the acute psychological problem of confinement in a small space.

Seven of 12 airmen studied at Smoky Hill Air Force Base, Salina, Kan., reported various physical symptoms when they did not wear a protective face mask. These included dizziness, indigestion, headache, visual blurriness, "echoing," and repetition of thoughts.

Because these health problems may in the "not-too-distant future" be encountered by civilians working on jet airliners, the authors recommend-

ed some safety measures for persons working on jet fuel cells.

They said the work should be performed by at least two men, with one man outside the cell serving as the observer of the man within the cell. They should carry on a continuous conversation, so that the observer may recognize any emergency and take prompt action in rescuing the repairman.

BOOK REVIEWS

Clinical Recognition and Management of Disturbances of Fluid Balance; by John H. Bland, M. D., 2d ed., Philadelphia, W. B. Saunders Company, 1956, Pp. 522, Price, \$11.50.

In the preface to this second edition the author states: "The pyramiding mass of information, both factual and conceptual, in the field of water, electrolyte and hydrogen ion metabolism has made a second edition of this book mandatory." However, of 633 references only 29 were from the literature of 1954-55. Much conceptual information from 1952 to 1955 (the years between the two editions) has been omitted. Although many errors of the first edition have been corrected, there are statements which appear contradictory because the author fails to be explicit.

In striving to provide a practical approach to the problems of disturbances in fluid balance for "clinical utilization at the bedside," the author indulges in great detail, at the expense of repetition, in the recognition and management of these disturbances associated with almost every disease state in all age groups. He includes presentation of the fundamental concepts to the approach of water and electrolyte disturbances followed by discussions of "metabolism" in congestive heart failure, diabetes, aging, surgery, physical and chemical injuries, and in diseases of the liver, pulmonary system, kidney, adrenals, and nervous system. The concluding chapter touches the problems of magnesium and potassium metabolism. The diagrams in the sections of the book on the fundamentals are clear and helpful to the basic understanding of the text but become sparse in the chapters related to specific disease states.

While the book can be a valuable review and reference for the practitioner, some of the discussions may be confusing to all but the experts in the field. For the teacher it affords an outline source for discussions of the problems in fluid balance. All readers should be aware that there is no empiric approach to the management of electrolyte problems and such a book serves only

as a guide to the individual management of the patient.

SAM A. THREEFOOT, M. D.

PUBLICATIONS RECEIVED

Appleton-Century-Crofts, Inc., N. Y.: *Modern Perinatal Care*, by Leslie V. Dill, M. D.

Grune & Stratton, Inc., N. Y.: *Progress in Gynecology*, Volume III, by Joe V. Meigs, M. D., and Somers H. Sturgis, M. D.

Paul B. Hoeber, Inc., N. Y.: *Dermatologic Formulary*, by Frances Pascher, M. D., (2nd Edit.).

The C. V. Mosby Co., St. Louis, Mo.: *Handbook of Orthopaedic Surgery*, by Alfred Rives Shands, Jr., M. D.

Philosophical Library, Inc., N. Y.: *A Book of Contemplation*, by Dagobert D. Runes; *From Sterility to Fertility*, by Elliot E. Philipp, M. A.; *Psychopathic Personalities*, by Harold Palmer, M. D.

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Charles C Thomas, Publisher, Springfield, Ill.: *New Research Techniques of Neuroanatomy*, edited by William F. Windle, Ph.D.; *Hormonal Regulation of Energy Metabolism*, edited by Laurance W. Kinsell, M. D.; *Human Blood Coagulation and Its Disorders*, by Rosemary Biggs, M. D., and R. G. MacFarlane, M. D., (2nd edit.); *Pneumoencephalography*, by E. Graeme Robertson, M. D.; *The Clinical Aspects of Arteriosclerosis*, by Seymour H. Rinzler, M. D.; *Mechanisms of Hypertension*, With a Consideration of Atherosclerosis, by Henry Alfred Schroeder, M. D.; *Hypophysectomy*, edited by O. H. Pearson, M. D.; *Occipitoposterior Positions*, by Edward L. King, M. D.; *The Medical Interview*, by Ainslie Meares D.P.M.; *The Principles of Therapeutics*, by J. Harold Burn, M. D.; *The Human Brain: From Primitive to Modern*, by A. M. Lassek, M. D.; *Lens Materials in the Prevention of Eye Injuries*, by Arthur Hail Keeney, M. D.; *Medical Radiation Biology*, by Friedrich Ellinger, M. D.; *De Motu Cordis*, translated from the original Latin by Kenneth J. Franklin.

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The low incidence of side action with Rolicton (brand of amisometradine) permits high dosage, extending the range of effective diuresis to a greater number of patients than was previously possible.

Laboratory studies demonstrate that Searle's new oral diuretic, Rolicton, causes positive diuresis with an essentially balanced excretion of water, sodium and chlorides.

Settel¹ studied the effect of Rolicton in forty-seven patients and found no serious side effects. Assali, who observed the action of Rolicton in five patients with severe toxemia of pregnancy, states² that side actions are essentially non-existent. Side actions of such low incidence, together with its diuretic efficacy, suggest a high order of usefulness for Rolicton.

One tablet of Rolicton, b.i.d., is usually adequate to maintain patients free of edema after the first day's dosage of four tablets. Some patients respond well to one tablet daily. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

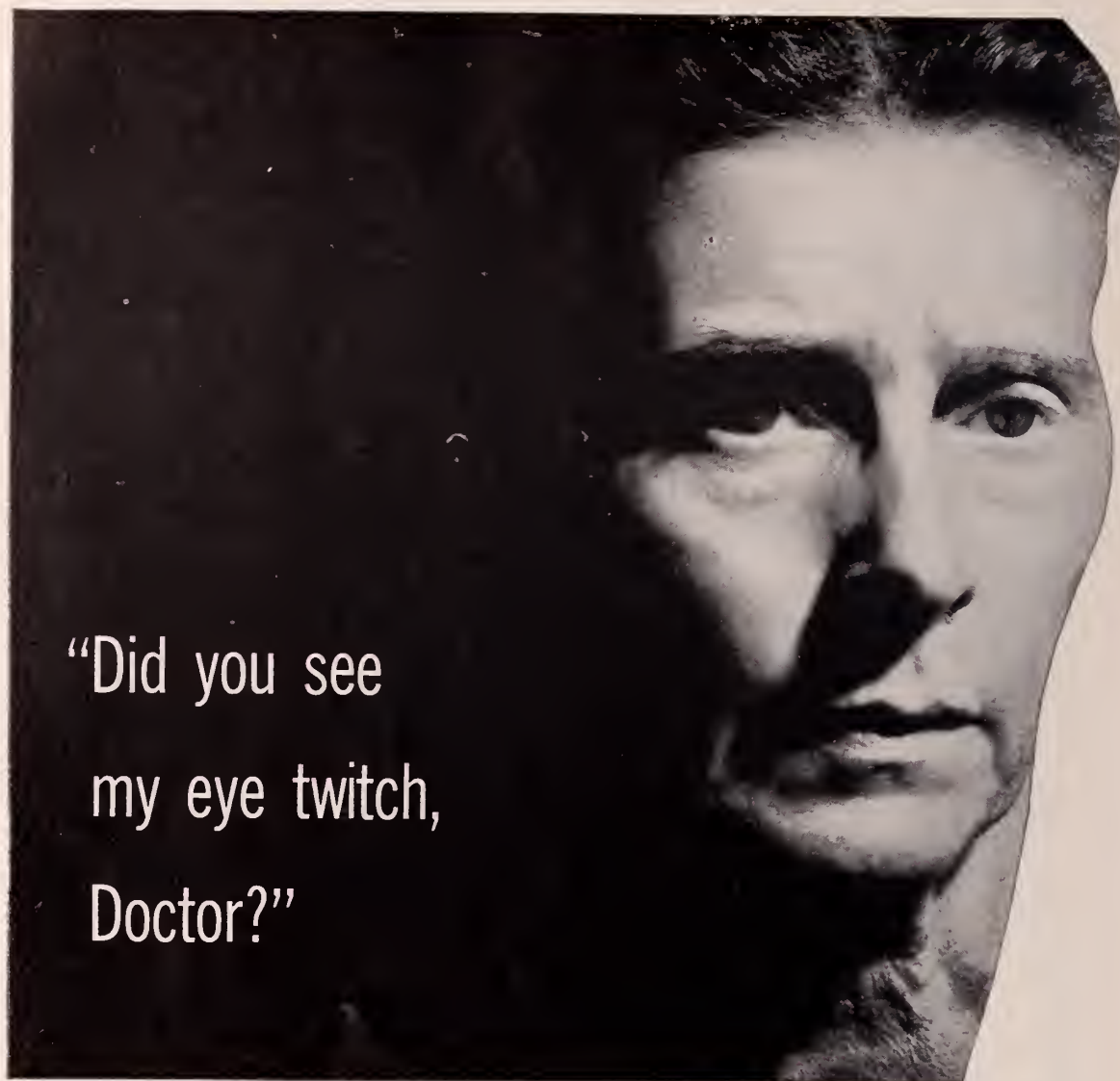
1. Settel, E.: Rolicton[®] (Aminoisometradine), a New, Nonmercurial Diuretic, *Postgrad. Med.* 21:186 (Feb.) 1957.

2. Assali, N. S.: Personal communication, May 28, 1956.



Normal glomerulus, showing arteriole musculature, glomerular epithelial podocytes, and "epitheloid" muscle cells of *vas efferens*.

SEARLE



She's nervous—and depressed at the same time: "I just can't get interested in anything."

You feel that a "tranquilizer" will probably relieve her nervousness—but not her depression. On the other hand, stimulants will relieve the depression—but may magnify her nervousness.

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Adult or juvenile, your patients with sore throats will welcome a course of HYDROZETS. These newest Merck Sharp & Dohme troches offer anti-inflammatory, anti-infective and analgesic properties that promptly alleviate distressing mouth or throat irritation whether caused by infection, mechanical injury or allergic reaction. And HYDROZETS taste so good, it's hard to believe they're medicine.

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ACHROSTATIN V CAPSULES
contain 250 mg. tetracycline
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Basic oral dosage (6-7 mg.
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in the average adult is
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- to correct many common anemias
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- to aid in promotion of growth and stimulation of appetite in poorly nourished children

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*Squibb Quality—
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Elemental Iron	38 mg.
(as ferric ammonium citrate and colloidal iron) (equivalent to 130 mg. ferrous sulfate exsiccated)	
Vitamin B ₁₂ activity concentrate	4 mcg.
Thiamine mononitrate	1.0 mg.
Riboflavin	1.0 mg.
Niacinamide	5 mg.
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Pyridoxine hydrochloride	0.5 mg.

Alcohol content: 12 per cent

Dosage: 1 or 2 teaspoonfuls t.i.d.

Supply: Bottles of 8 ounces and 1 pint.

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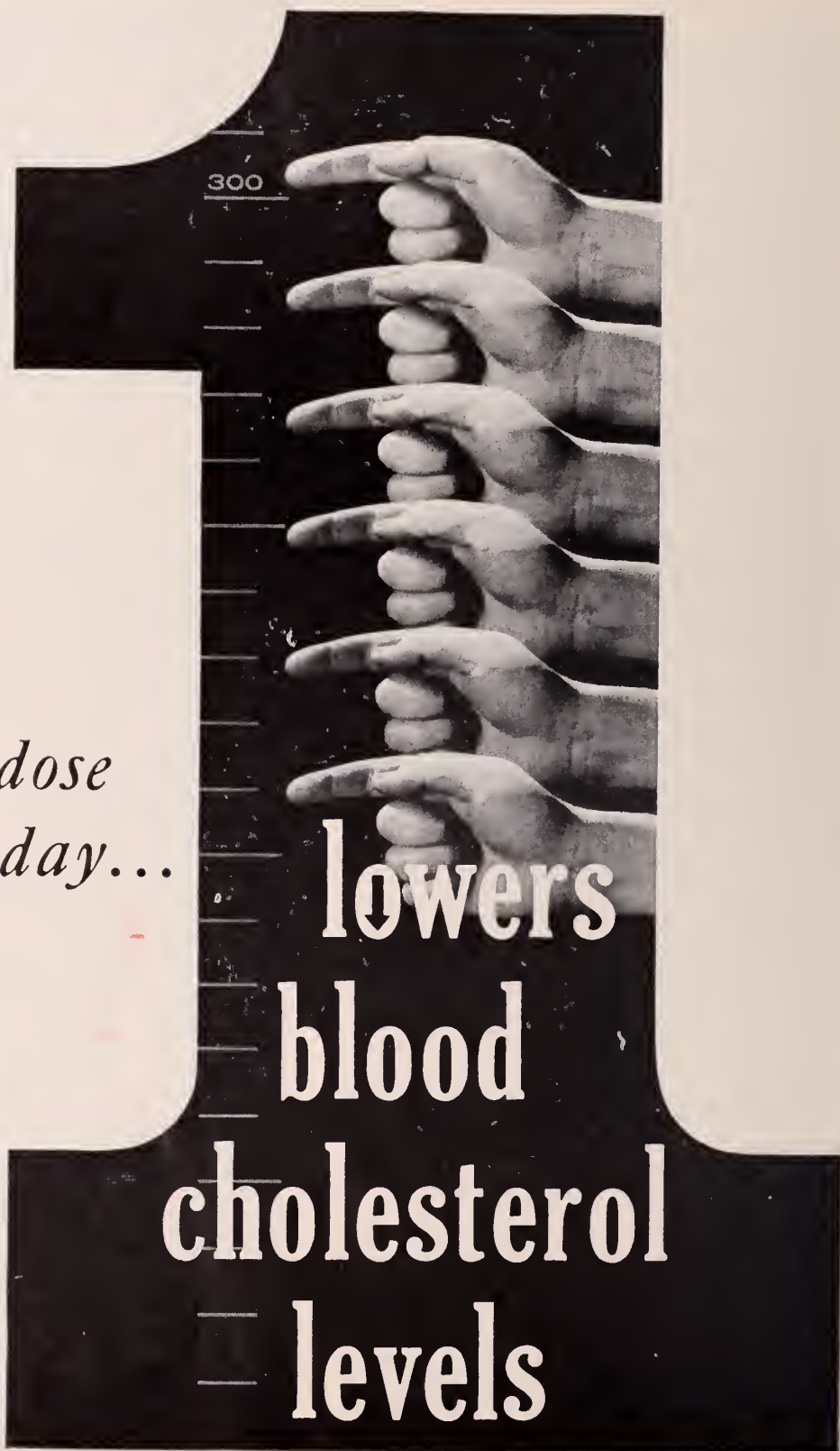
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... while allowing the patient
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Each tablespoonful of emulsion contains:

Linoleic acid.....	6.8 Gm.
Vitamin B ₆	0.6 mg.
Mixed tocopherols (Vitamin E)	11.5 mg.

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to the patient



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ARALEN[®] *in* RHEUMATOID ARTHRITIS

Extensive studies of rheumatoid arthritis and related collagen diseases—in this country and abroad—have shown the antimalarial Aralen phosphate to be highly effective and well tolerated in a large percentage of patients.

Clinical Results with Aralen in Rheumatoid Arthritis

Author	No. of Cases	Major Improvement	Minor Improvement	No Effect
Haydu ¹	28	22	5	1
Rinehart ²	25	12	4	9
Freedman ³	50	43	3	4
Bagnall ⁴	108	77	12	19
Bruckner ⁵	36	32	0	4
Cohen and Colkins ⁶	22	17	3	2
Scherbel et al. ⁷	25	9	8	8
Total	294	212 (72%)	35 (12%)	47 (16%)

- Success dependent upon persistent treatment
- Often of benefit where other agents have failed
- Remissions on therapy well maintained
- Remission of 3 to 12 months possible even if treatment is interrupted
- Tachyphylaxis not evident

GENERAL EFFECTS:

- Patient feels better
- Patient looks better
- Exercise tolerance increases
- Walking speed and hand grip improves

LABORATORY EFFECTS:

- E. S. R. may fall slowly

ANALGESICS AND STEROIDS:

- Requirements usually reduced or eliminated

JOINT EFFECTS:

- Pain and tenderness relieved
- Mobility increases
- Swellings diminish or disappear
- Muscle strength improves
- Rheumatic nodules may disappear
- Even severe or advanced deformity may improve
- Active inflammatory process usually subsides
- Joint effusion may diminish

DOSAGE:

Aralen is cumulative in action and requires four to twelve weeks of administration before therapeutic effects become apparent.

Latest information indicates that an initial dose of 250 mg. of Aralen phosphate is preferable to the higher doses sometimes recommended. However, if side effects appear, withdraw Aralen for several days until they subside. Reinstate treatment with 125 mg. daily and, if well tolerated, increase to 250 mg. The usual maintenance dose

New Chemotherapy

INDICATIONS:

- Rheumatoid arthritis, acute or chronic —with or without adjunctive therapy.
- Spondylitis
- Arthritis associated with lupus erythematosus or psoriasis

HOW SUPPLIED:

Aralen phosphate: 250 mg. tablets in bottles of 100 and 1000.
125 mg. tablets in bottles of 100.

Tolerance:

Aralen is usually well tolerated. Toxic effects are usually mild and to date have been transitory in nature, disappearing completely either on continuance or cessation of therapy or on reduction in dosage.

Gastrointestinal disturbances (e.g. nausea, rarely vomiting, diarrhea, abdominal cramps, anorexia) are frequent manifestations of intolerance. Temporary blurring of vision (due to interference with accommodation) is also relatively frequent.

Pleomorphic skin eruptions (e.g. lichenoid, maculopapular, purpuric), although generally mild, may preclude the use of an optimum dosage schedule. If a skin reaction persists on a reduced dosage schedule, or recurs after reinstitution of treatment with gradually increasing doses, discontinue Aralen till the lesion again disappears and consider resuming treatment with Plaquenil® (brand of hydroxychloroquine).

Less frequently transitory vertigo, headache, lassitude, or neurological disturbances, such as nervousness, irritability, emotional change, and nightmares have been reported. Instances of unexplained slight gradual weight loss as the patient's general health and arthritic condition improved have been mentioned. Occasional instances of bleaching (depigmentation) of the hair have been described.

Although an occasional instance of leukopenia, with normal differential count, has been reported (WBC about 3000), it has not proved troublesome because it has always been reversible on discontinuance, or diminution of the dose. Even spontaneous reversal may occur while full dosage is maintained.

THEORY OF ACTION:

Aralen appears to suppress or induce remission of rheumatoid inflammatory processes by inhibiting adenosinetriphosphatase.

Caution:

Aralen is known to concentrate in the liver and, although hepatic damage has never been reported, the drug should be used with caution in the presence of liver disease. In the presence of severe gastrointestinal, neurological, or blood disorders, the drug should be used with caution or not at all. If such disorders occur during the course of therapy, the drug should be discontinued. Concomitant use of gold or phenylbutazone with Aralen should be avoided because of the tendency of these agents to produce drug dermatitis.

Clinical Comments:

Of fifty patients receiving Aralen therapy, "43 have become really well; that is, they have no stiffness, and any pain that occurs can reasonably be attributed to use of joints affected by secondary degenerative changes. They have no evidence of joint inflammation, but may have a raised erythrocyte sedimentation rate. They have little or no need for analgesics."

Freedman³

"One hundred and twenty-five private patients have been carefully followed clinically and haematologically while receiving well over 200 patient-years of chloroquine [Aralen] therapy. The results are considered good in 70%, one-half of these cases being in remission. Improved work performance, sedimentation rate, and hemoglobin levels paralleled the major objective gain in this 70%. 90% of them remained on chloroquine [Aralen] therapy, half for more than two years. Classical peripheral rheumatoid arthritis, spondylitis, arthritis of juvenile onset, and rheumatoid disease with psoriasis, all appeared to respond about equally well.

"It is suggested that chloroquine comes closer to the ideal for long-term, safe, control of rheumatoid disease than any other agent now available."

Bagnall⁴

"Out of the 36 rheumatoid arthritis cases we treated . . . favorable results were obtained in 32 cases."

Bruckner et al.⁵

References

1. Haydu, G.G.: Rheumatoid arthritis therapy: a rationale and the use of chloroquine diphosphate, *Am. J. M. Sc.* 225:71, Jan., 1953.
2. Rinehart, R.E.: Chloroquine therapy in rheumatoid arthritis, *Northwest Med.* 54:713, July, 1955.
3. Freedman, A.: Chloroquine and rheumatoid arthritis, a short-term controlled trial, *Ann. Rheum. Dis.* 15:251, Sept., 1956.
4. Bagnall, A.W.: The value of chloroquine in rheumatoid disease, a four year study of continuous therapy, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
5. Bruckner L., and Rosenzweig, S.: Treatment of chronic rheumatoid arthritis with synthetic antimalarials, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
6. Cohen, A.S., and Calkins, Evan: A controlled study of chloroquine as an antirheumatic agent, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.

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many patients with **MILD** involvement can be effectively
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'MEPROLONE'

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MULTIPLE COMPRESSED TABLETS

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The first meprobamate-prednisolone therapy

the one antirheumatic, antiarthritic that
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200 mg. dried aluminum hydroxide
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prednisolone in the same formula as
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INTRAVENOUS Compatible with common IV fluids. Stable for 24 hours in solution at room temperature. Average IV dose is 500 mg. given at 12 hour intervals. Vials of 100 mg., 250 mg., 500 mg.

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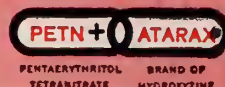
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Dosage and supplied: begin with 1 to 2 yellow tablets (10 mg. PETN plus 10 mg. ATARAX) 3 to 4 times daily. This may be increased for maximal effect by switching to *pink* tablets (20 mg. PETN plus 10 mg. ATARAX). In bottles of 100.

CARTRAX should be taken *before* meals, on a *continuous* dosage schedule. Use with caution in glaucoma.

1. Russek, H. I.: J. Am. Geriat. Soc. 4:877 (Sept.) 1956.

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COMPONENT in each 30 cc. (1 fl. oz.)	ACTION	BENEFIT
Neomycin base, 210.0 mg. (as neomycin sulfate, 300 mg.)	antibiotic	Affords effective intestinal bacteriostasis.
Kaolin (6.0 Gm.)	adsorbent, demulcent	Binds toxic and irritating substances. Provides protective coating for irritated intestinal mucosa.
Pectin (142.8 mg.)	protective, demulcent	Supplements action of kaolin as an intestinal detoxifying and demulcent agent.
Dihydroxyaluminum aminoacetate (0.25 Gm.)	antacid, demulcent	Enhances demulcent and detoxifying action of the kaolin-pectin suspension.
Natural belladonna alkaloids: hyoscyamine sulfate (0.1037 mg.) atropine sulfate (0.0194 mg.) hyoscine hydrobromide (0.0065 mg.)	anti- spasmodic	Relieves intestinal hypermotility and hypertonicity.
Phenobarbital (1/4 gr.)	sedative	Diminishes nervousness, stress and apprehension.

INDICATIONS: DONNAGEL WITH NEOMYCIN is specifically indicated in diarrheas or dysentery caused by neomycin-susceptible organisms; in diarrheas not yet proven to be of bacterial origin, prior to definitive diagnosis. Also useful in enteritis, even though diarrhea may not be present.

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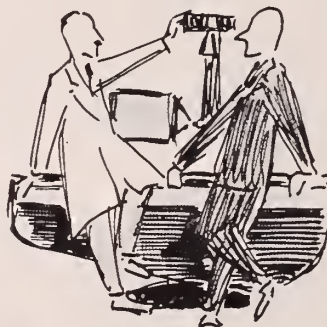


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toleration **914** patients had
no side effects

References: 1. Case reports in the Pfizer Medical Department Files from fifty-three clinicians, and the following published reports: Shubin, H.: Antibiotic Med. & Clin. Therapy 4:174 (March) 1957. Carter, C. H., and Maley, M. C.: Antibiotics Annual 1956-1957, New York, Medical Encyclopedia, Inc., 1957, p. 51. Winton, S. S., and Chesrow, E.: Ibid., p. 55. LaCaille, R. A., and Prigot, A.: Ibid., p. 19.

*Trademark

†Trademark, oleandomycin tetracycline

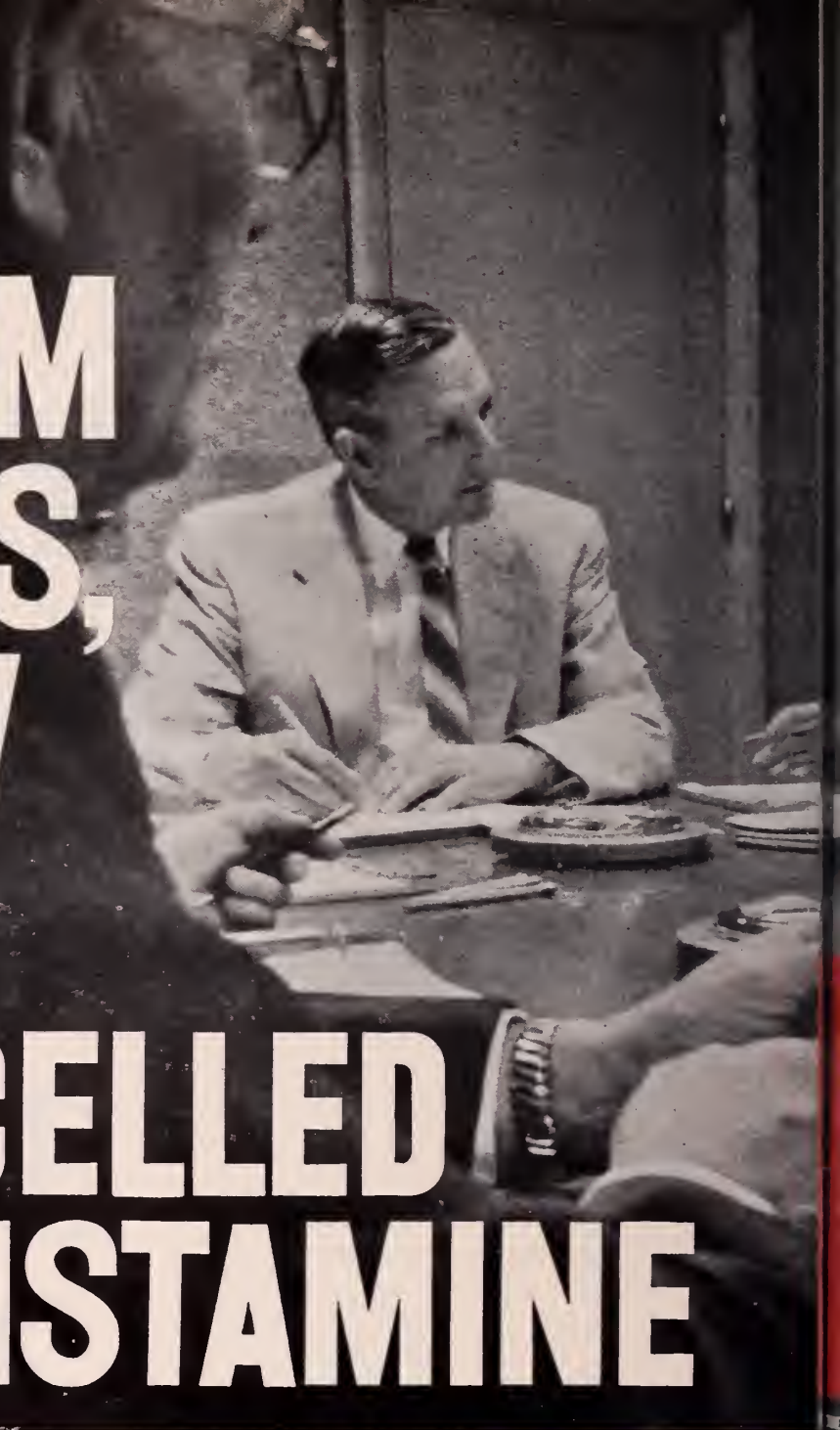
Increasing use of Signemycin V and other Signemycin formulations has confirmed the value of this agent in the armamentarium of the physician treating antibiotic-susceptible infections, particularly those seen at home or in office where susceptibility testing may not be practicable and where immediate institution of the most broadly effective therapy is necessary.

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» **unexcelled antihistaminic action**

Diagnosis	No. of Patients	Response				Side Effects
		Excellent	Good	Fair	Negative	
Allergic rhinitis and vasomotor rhinitis	30	14	9	5	2	Slight Drowsiness (3)
Urticaria and angioneurotic edema	3	1	1	1		Dizzy (1)
Allergic dermatitis	2		1	1		Slight Drowsiness (2)
Bronchial asthma	1		1			
Pruritus	1		1			
Total	37	15	13	7	2	Drowsiness (5) 16.2% Dizzy (1)

From the preliminary **Dimetane Extentabs** studies of three investigators. Further clinical investigations will be reported as completed.



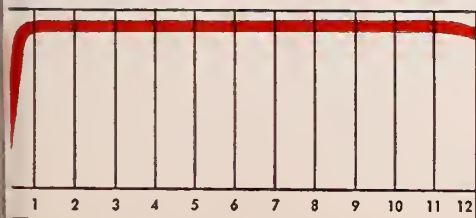
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a blanket of allergic protection, covering 10-12 hours — with just one **Dimetane Extentab** » DIMETANE Extentabs protect patient for 10-12 hours on one tablet.



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Dosage:

Adults—One or two 4-mg. tabs.
or two to four teaspoonfuls
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One Extentab q.8-12 h.
or twice daily.
Children over 6—One tab.
or two teaspoonfuls Elixir t.i.d.
or q.i.d., or one Extentab q.12h.
Children 3-6—½ tab.
or one teaspoonful Elixir t.i.d.

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why California table wine in the low-sodium diet?

TABLE I¹

	No. specimens examined	Sodium (mg./100 cc.) Mean
Musts (crushed white grapes)	9	1.63
California Red Table Wines	82	5.56
California White Table Wines	73	5.44
California Dessert Wines	104	7.10

Dietary restriction of sodium has become a standard procedure in the control of edema associated with cirrhosis of the liver, congestive heart failure, certain kidney ailments, toxemias of pregnancy, during digitalization and in drug-induced diuresis.

Unfortunately sodium-restricted diets tend to be flat, tasteless, monotonous, leading toward failure of dietary cooperation by the patient.

In such cases California table wine may be employed safely as well as to advantage in making the food more palatable without adding significant amounts of sodium.

In a recent study¹ it was shown that California table wines are remarkably low in sodium content—less than 10 mg. per 100 cc. (3½ ounce glass).

Since recent research^{2,3,4} has also shown that wine stimulates a lagging appetite and aids digestion while adding a sparkle to any meal—why not encourage the moderate use of wine by the patient on a restricted dietary, as well as by the sufferer from anorexia, the post-surgical, convalescent or geriatric patient?

May we send you a copy of "Uses of Wine in Medical Practice"? A copy is available to you, at no expense, by writing to: Wine Advisory Board, 717 Market Street, San Francisco 3, California.

1. Lucia, S. P. and Hunt, M. L.: *Am. J. Digest. Dis.* 2:26 (Jan.) 1957.

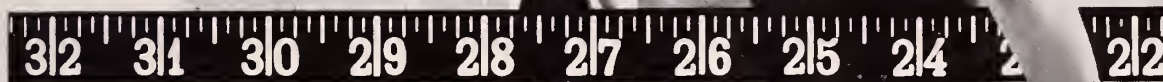
2. Goetzel, F. R.: *Permanente Found. M. Bull.* 8:72 (April) 1950.

3. Irvin, D. L. and Goetzel, F. R.: *Permanente Found. M. Bull.* 9:119 (Oct.) 1951.

4. Irvin, D. L.; Durra A., and Goetzel, F. R.: *Am. J. Digest. Dis.* 20:117 (Jan.) 1953.

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of the overweight patient*



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Notably safe because it is not likely to aggravate coexisting conditions, such as diabetes, hypertension or chronic cardiac disease.³

References: (1) Holt, J. O. S., Jr.: Dallas M. J. 42:497, 1956. (2) Gelvin, E. P.; McGavack, T. H., and Kenigsberg, S.: Am. J. Digest. Dis. 1:155, 1956. (3) Natenshon, A. L.: Am. Pract. & Digest Treat. 7:1456, 1956.

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Flu Fight

Drug Firms Speed
Vaccine Output, But
Will the U.S. Need

Asiatic Virus Raises Th
Government Buys, P
nd Hens Have to He
en Attack, Rapid Sp

8 STUDENTS ON FLIGHTS TO U.S. HAVE ASIAN FLU

New York, Aug. 15 (AP) — Laboratory tests on eight foreign exchange students who arrived Aug. 8 show they are victims of Asiatic flu, the health department reported today. The eight arrived on a plane from Europe.

Twenty-nine other students suffering from influenza arrived Tuesday from Rotterdam on the ship Arosa Sky. One, Nicholas Memmos, a Greek exchange student, died yesterday. Six of these students were released today; the others are to be released tomorrow. It has not been determined whether they died from Asiatic

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THE INFLUENZA

How Deadly Will it
What Can We Do about

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U.S. Fighting Asiatic

The War On Asiatic Flu

There's cause for concern about Asiatic flu, but scientists and public health officials see no reason for anyone to panic.

First shipments of the vaccine against the new influenza strain have arrived in Chicago, setting off a flood of telephone calls from worried patients to doctors, and from doctors to drug suppliers. This is a normal pattern of mass fear and is understandable.

Even though Salk vaccine priorities were necessary, the regulation produced administrative headaches, public complaints and probably a gray, if not a black market. When regulation is invoked, it would be

PUBLIC HEALTH

Influenza

➤ INFLUENZA, one of the most predictable of communicable diseases, is going "on cat feet" across the nation now. It has already struck once this year in mild epidemic form at an Air Force base in Colorado. When and how it will strike again is a perennial riddle for public health authorities. It will probably not lie dormant

The War on Mutant A

If Florence was in the grip of an epidemic of colds, coughs and fevers, astrologers . . . declared that it was caused by the influence of an unusual conjunction of planets. This sickness is to be known as "influenza".

—Chronicles of
1200-1470.

To combat new influenza, a worldwide epidemic this week in response to a virus from the Far East. So is the World Health Organization, which collects information from around the globe and specimens of the epidemic. In more than a century, including those of the

Asian Flu: the Outlook

Asian influenza will hit the U.S. this fall before mass immunization can be effective, and the nation faces an epidemic which may strike 15 million to 30 million people. The disease is relatively mild (in no way comparable to the killing "Spanish flu" of 1918-19), and is likely to cause only a small number of deaths among the feeble young and enfeebled old. But it may compel 10% to 20% of the population in affected areas to take

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to counteract
complications from
"ORIENTAL FLU"

WATCH "ASIATIC" FLU—

The New Virus Threat From Orient

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effective against staph-, strep- and pneumococci

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udden change to
virus in 1947, P
the vaccine th

Recent Observations

On Self-Regulated Schedules For Infants

Genetically acquired behavioral predispositions enable the normal baby to regulate its feeding intake and periodic hunger sensations, its feeding habits. These physiological regulatory forces may be satisfied by adapting the formula content and feeding period to the individual needs of the infant. It involves a sensible compromise between too rigid a schedule, geared to the clock and too lax a schedule, based on self-demand feedings. Such is the current objective: for either extreme can lead to infant feeding difficulties.

The newborn may become a feeding problem if the prescribed formula is excessive or the feeding schedule rigid. Every time he is awakened abruptly from satisfying slumber to be fed forcefully, the baby gradually loses his enthusiasm for the food and begins to resist the feeding. The young infant may balk at the crude introduction of a new food or feeding procedure without the proper prelude of gradual adaptation of taste, color, consistency and quantity.

The older infant weaned from bottle to cup may reject milk or go on a hunger strike. Devoted to his bottle he resents its sudden deprivation. It takes a certain readiness for weaning to make that change agreeable. Later the infant becomes somewhat independent of his mother and arbitrary with his food. What he enjoyed yesterday, he rejects today. If he distorts the diet for a day and his mother resorts to force, a feeding problem is in the making. Sensible decorum will solve these

little difficulties before they become big behavior disturbances in childhood.

The problems of infant feeding are always the same but solutions may differ with each era. The carbohydrate requirement for all infants is as completely fulfilled by KARO® Syrup today as a generation ago. Whatever the type of milk adapted to the individual infant, KARO may be added confidently because it is a balanced mixture of low sugars, easily mixed, well tolerated, palatable, hypoallergenic, resistant to fermentation, easily digestible, readily absorbed, non-laxative. Readily available in all food stores.

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Each tablet contains:

ACHROMYCIN® Tetracycline	125 mg.
Phenacetin	120 mg.
Caffeine	30 mg.
Salicylamide	150 mg.
Chlorothen Citrate	25 mg.

Syrup

Each teaspoonful (5 cc.) contains:

ACHROMYCIN® Tetracycline equivalent to tetracycline HCl	125 mg.
Phenacetin	120 mg.
Salicylamide	150 mg.
Ascorbic Acid (C)	25 mg.
Pyrimidine Maleate	15 mg.
Methylparaben	4 mg.
Propylparaben	1 mg.



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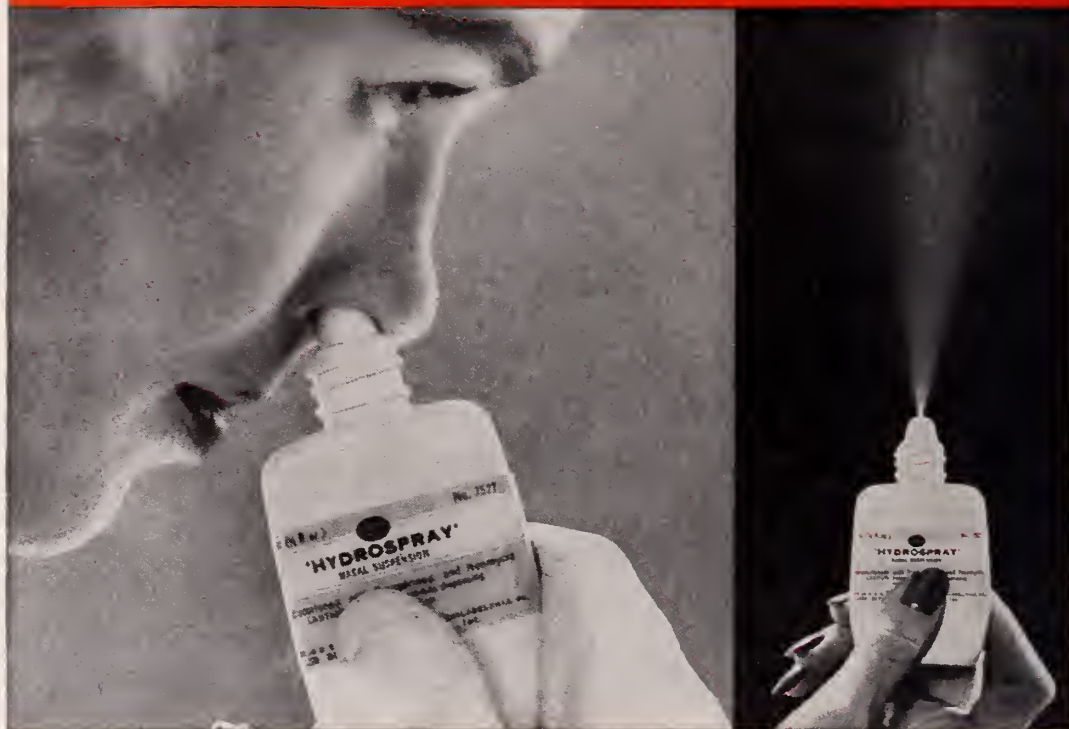
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SUPPLIED: In squeezable plastic spray bottles containing 15 cc. HYDROSPRAY, each cc. supplying 1 mg. of HYDROCORTONE, 15 mg. of PROPADRINE Hydrochloride and 5 mg. of Neomycin Sulfate (equivalent to 8.5 mg. of neomycin base).



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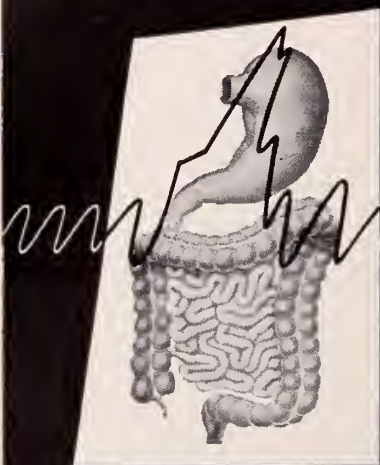
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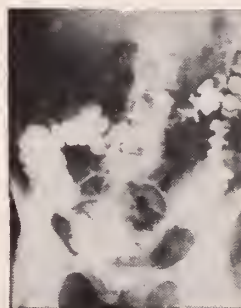


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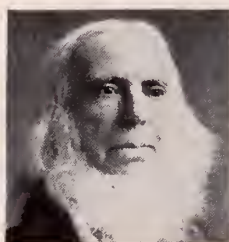
The funny hole in Mr. Cooper's building

MANY a New Yorker shook his head, and not a few snickered, when they saw the "hole" in Peter Cooper's new building.

But to the benign gentleman with the ruff of graying whiskers it was all so simple: Some day someone would perfect the passenger elevator.

The mere fact that there wasn't one in 1853 would mean little to a man who, with his own hands, had built and driven the first American locomotive. Whose money, and faith, were to help see the Atlantic Cable through all its disasters to final success. And who would "scheme out" a Panama Canal plan fourteen years before DeLesseps.

But Peter Cooper's belief in the future ran in a vein far deeper than simply the material. For his "building with a hole" was Cooper Union, the first privately-endowed tuition-free college in America. A place where young men and women of any race, faith, or political opinion could enjoy the education which he, himself, had been denied. Peter Cooper's dearest dream



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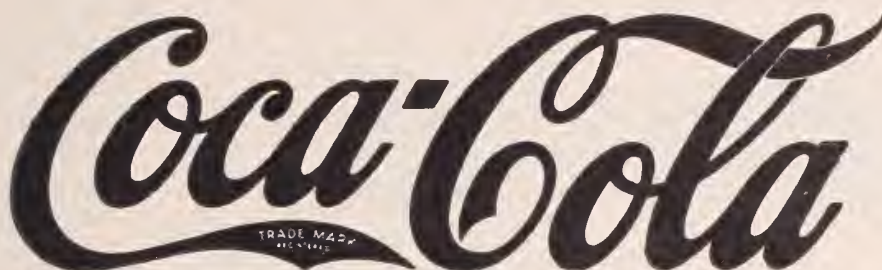


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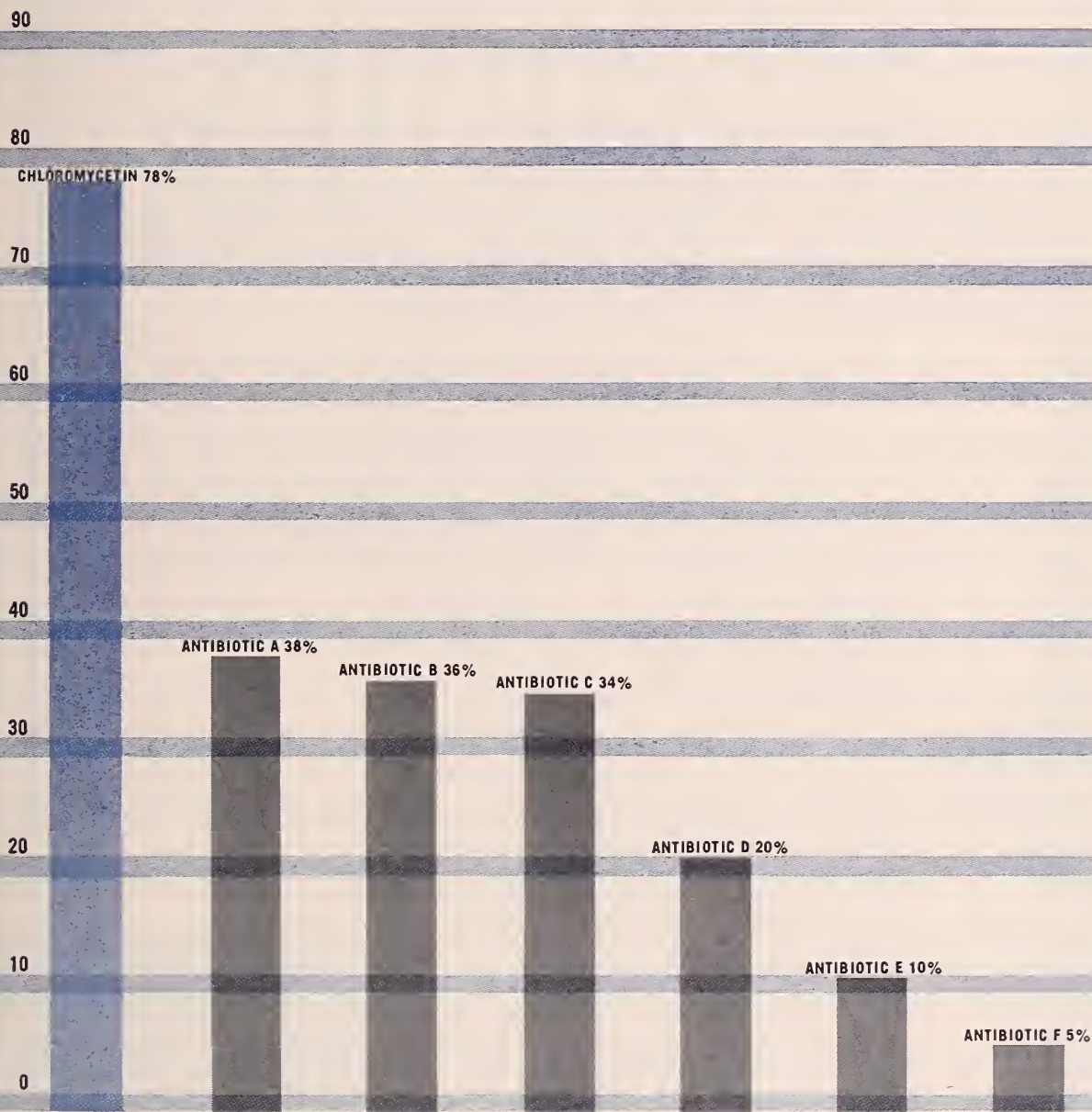
REFERENCES:

- (1) Petersdorf, R. G.; Bennett, I. L., Jr., & Rose, M. C.: *Bull. Johns Hopkins Hosp.* 100:1, 1957. (2) Yow, E. M.: *GP* 15:102, 1957. (3) Altemeier, W. A., in Welch, H., and Marti-Ibanez, F., ed.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 629. (4) Kempe, C. H.: *California Med.* 84:242, 1956. (5) Spink, W. W.: *Ann. New York Acad. Sc.* 65:175, 1956. (6) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956. (7) Wise, R. I.; Cranny, C., & Spink, W. W.: *Am. J. Med.* 20:176, 1956. (8) Smith, R. T.; Platou, E. S., & Good, R. A.: *Pediatrics* 17:549, 1956. (9) Royer, A.: Scientific Exhibit, 89th Ann. Conv. Canad. M. A., Quebec City, Quebec, June 11-15, 1956. (10) Bennett, I. L., Jr.: *West Virginia M. J.* 53:55, 1957. (11) Altemeier, W. A.: *Postgrad. Med.* 20:319, 1956. (12) Felix, N. S.: *Pediat. Clin. North America* 3:317, 1956. (13) Metzger, W. I., & Jenkins, C. J., Jr.: *Pediatrics* 18:929, 1956. (14) Woolington, S. S.; Adler, S. J., & Bower, A. G., in Welch, H., and Marti-Ibanez, F., ed.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 365. (15) Waisbren, B. A., & Strelitzer, C. L.: *Arch. Int. Med.* 99:744, 1957.



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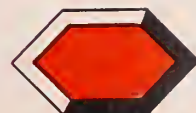
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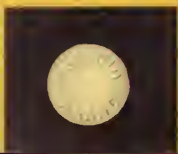
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once too
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CLINICAL USE OF DIGITALIS IN CONGESTIVE HEART FAILURE *

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INTRODUCTION

The basic defect in congestive heart failure is almost universally conceded to be a loss of power of the heart as a pump, which loss of power is related to a diminished efficiency of contraction of the myocardial fibers. The digitalis drugs are the only substances which are known markedly to increase the contractile power of the heart. It is logical, therefore, that digitalis should be, as it in fact is, the foremost modality of treatment of heart failure.

The active principles of these drugs are composed of three moieties:

1. A prosthetic group which is a ring structure, incorporating an oxygen atom, and characterized by a carbon-carbon double bond, and a carbonyl group in the delta position. This structure, which is an unsaturated lactone, is specific in its inotropic effect, and alterations of the features mentioned markedly diminish the cardiotonic value of the digitalis body to which it is attached.¹ Many biologic substances, including for example, ascorbic acid possess this structure.

2. A cyclopentenophenanthrene nucleus. This is a steroid structure common, with variations, to the adrenocortical and gonadal hormones, and to cholesterol. Its role is as a carrier for the prosthetic group, and probably has to do with specificity of the site of action of the lactone group; the latter has cardiotonic activity of itself but vastly greater when attached to the steroid nucleus. The nucleus has no intrinsic cardiotonic activity; however, variations of its substituents, usually hydroxyls or aldehydes, modify the intensity of the effects of digitalis. The lactone ring is attached to the steroid nucleus at the C-17 position, and the group together is referred to as an aglycone.

3. One or more sugar molecules are attached as a side chain to the steroid nucleus at the C-3 position. This whole molecule is called a glycoside. The number and types of sugars and acetylation or lack of it of the terminal sugar determine the solubility and the duration of effect of the compound, but are not essential to cardiotonic activity.

Clinical effects of digitalis on the heart and circulation in congestive heart failure. Administration of the drug to the subject in heart failure produces the following principal effects:²⁻⁵

Slowing of the ventricular rate; in sinus rhythm, this is a consequence of compensation; in the presence of auricular fibrillation, this is due to a direct effect on junctional tissue conduction resulting in

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increased atrioventricular block: with small doses, the block is due to vagal effect of digitalis, an effect which is abolished by atropine. There is increased force of systolic contraction, with more complete emptying and increased cardiac output. The duration of systole is shortened, there is increased ventricular filling, and a longer resting period. The diastolic volume is reduced; there is, therefore, a shorter initial diastolic fiber length, hence diminished oxygen consumption per unit work: which is to say there is increased efficiency of the myocardium. The arterio-venous oxygen difference falls, the venous pressure falls, and the pulmonary artery diastolic pressure falls. There is an associated marked diuresis of water, sodium, and chlorides, and a diminution of edema.

Digitalis produces characteristic changes in the electrocardiogram.⁶ These include especially a sagging of the terminal portion of the S-T segment, lowering or inversion of T-waves, and shortening of the Q-T interval. These changes are not quantitatively correlatable with the degree of digitalization, and can only give evidence of the presence of digitalis. Their absence does not rule out prior administration of digitalis.

Repeated attempts through the years to prove a site of action of digitalis in areas other than the heart have left few marks to stand against the truly enormous literature concerning the well established myocardial effects of significant magnitude.⁷⁻⁹ There is recurrent interest in the possible direct renal effect of digitalis, and it does seem that under experimental conditions digitalis may have a direct renal effect; however, the magnitude of such effects is not nearly of the same order as those demonstrated for the myocardium. Inasmuch as digitalis affects several enzyme systems which are widespread in the body,^{5, 10} it is not unlikely that changes in a great many discrete functions could be demonstrated, especially with toxic doses of the material.

As to the absorption, fate, and the ex-

cretion of digitalis, much remains to be learned. Most of the work in this area has been carried out with digitoxin, and since this drug is unusual in that it is adsorbed on serum albumin,¹¹ it is not certain that data from its study will apply generally. It is known that digitoxin is removed from the blood very rapidly, and that very little is held in the extracellular fluid;¹² yet it is denied that it has any special affinity for the heart and that it is fixed by this organ.¹⁴ It is a question whether this last is true regarding other digitalis glycosides, and whether it is true in vivo. Certainly, from the clinical viewpoint one loads the body with digitalis, then merely replaces from day to day the daily loss, a situation which strongly suggests a depot exists in the body. Since the heart is the undoubted site of action of digitalis, there is a natural suspicion that it may constitute this depot.

Studies on urinary excretion now possible with isotopically tagged glycosides are as yet fragmentary.^{14, 15} It would appear that excretion is proportional to the total amount in the body at a given time, and is variable from subject to subject and from day to day, and that the cardiac excretes it as efficiently as the normal.

MODE OF ACTION

The mode of action of digitalis still defies precise description. However, much reasonable speculation, based on a considerable body of experimental data is available.

Within the myocardial cells energy is delivered to the contractile machine in the form of high-energy phosphate bonds produced by the chain of reactions through which carbohydrate is degraded. This potential energy is housed in the adenosine-polyphosphate-phosphocreatine stores of muscle. The contractile elements themselves are actin and myosin¹⁶ which can exist separately, in an extended form, held apart by ionic forces in which potassium plays a prime role, the structure stabilized by energy supplied by the ATP, and made possible by the semipermeable

nature of the cell membranes, which, while stable, do not allow the passage of charged particles such as potassium ions.¹⁷ This state of pent up potential, which is in electrical equilibrium, constitutes the polarized, resting, presystolic state of the myocardium. The arrival of the impulse from the pacemaker involves the production of acetylcholine which disrupts the equilibrium of the membrane, permits potassium to migrate, breaking the intrafibrillar ionic equilibrium, permitting actin and myosin to complex, and to assume the least-strained intramolecular arrangement, by spiralling, which perforce results in shorter molecules, hence, shorter fibers, which constitute by their collective shortenings, the contraction of the heart. Now cholinesterase⁵ is present to limit the action of acetylcholine; adenosinetriphosphatase,⁵ and adenosinetriphosphate-deaminase⁵ to deactivate the ATP; and myokinase¹⁰ to inhibit ATPase; and no doubt many other enzyme systems, each with its own relationship to concentration of calcium,¹⁷ magnesium, and other ions. It has been demonstrated that digitalis glycosides are capable of inhibiting^{5, 10} or accelerating several of the enzymes mentioned under various conditions, and could therefore favorably influence the gradients of the ADP-ATP-PC system, and the duration of effect and concentration of ACH. Such changes could favor the efficient reconstruction of the structure of potential energy above described. These speculations are not nullified by Wollenberger's finding of unaltered ATP in heart failure,¹ and in any case Proctor has challenged the validity of this finding.⁵

It has also been suggested by Szent Georgyi¹⁶ that digitalis directly affects membrane permeability, and that it may replace some unknown substance normally present, or a substance to which the heart has become refractory. In this connection it is impossible to escape noting the similarity of digitalis to steroid hormones, as well as the fact that certain adrenal steroids produce syndromes which simulate some aspects of heart failure. Considering

the numerous examples of biological antagonism¹⁸ encountered in enzyme studies, there might well be such an "unknown substance." The discovery of new adrenal steroids is a recurrent phenomenon, and it is not impossible that some cortical principle involved in congestive heart failure might eventually be found. Of current interest in this area is the report by Titus, Weiss, and Hadju¹⁹ of the isolation of a cardiac active compound from beef adrenal medulla, which they have identified as palmitoyl lysolecithin. The authors mention the work of Klunk and Debuch who identified a substance of this structure in heart muscle. It must be noted that the material in question is a choline compound, which raises a question as to whether the cardiac effect noted might not be an acetylcholine type of effect rather than a digitalis-like effect.

I shall not attempt to list all the available digitalis preparations, but rather those which are in common use and those which are of current interest.

Digitalis leaf, or the whole powdered dry leaf of *Digitalis purpurea*, is the long standing choice. It contains variable amounts of cardioactive principles and must be standardized biologically. About 20 per cent absorption takes place from the gastrointestinal tract. Its onset of effect is of the order of eight hours, and the duration of effect is one to three weeks. It has the advantages that gastrointestinal symptoms of toxicity occur early, and as a rule before serious cardiac toxic manifestations. Its prolonged effect permits a smoother maintenance with daily doses once this dose has been determined. Also it is relatively cheap. It is remarkable how many patients can be well maintained on a dose of one and a half grains per day. It has the disadvantages that gastric intolerance is not infrequent, and that when toxicity has developed its duration is prolonged to as much as a week or longer. The advent of pure glycosides, which can be standardized by weight, has seriously challenged the popularity of the older prep-

aration. Its chief use is in slow digitalization; for this a prescription of one tablet of a grain and a half, three times daily until signs of digitalization or early toxicity occur is a good method; this will take five to eight days. Digitalis leaf can no longer be considered a useful form for rapid oral digitalization, and has no place at all in parenteral therapy.

Digitoxin, an early example of purified glycoside, is widely used. It is absorbed completely on oral administration so that the oral and parenteral doses are the same. It has a long latent period orally and parenterally, evidently because, as has been shown, it is adsorbed on serum albumin;¹¹ for the same reason its rate of dissipation is extremely slow. Its onset and its duration of effect are quite similar to these factors for the leaf. It has the advantage of precise oral absorption, and of facility of transfer to parenteral maintenance when the oral route is not available. It has the disadvantages that gastrointestinal warning symptoms of overdosage are often absent; because of its slow onset of effect it is not a drug of choice for rapid digitalization; and, finally, the great duration of effect makes overdosage unusually hazardous. It is not a drug that I use. The digitalizing dose ranges from 1.0 to 1.5 mg, with an average of 1.2 mg. The daily maintenance dose is from 0.1 to 0.2 mg., but toxicity has occurred even at the lower dosage level, and may develop after several weeks on such doses.

Digoxin, not to be confused with digitoxin, is a glycoside of *Digitalis lanata*. It may be classed as a rapidly acting agent. Its absorption from oral administration is only moderately good, about 70 per cent, so that the parenteral dose is somewhat less than the oral dose. The onset of significant effect on parenteral use is of the order of thirty minutes, and the peak effect about three hours. On oral use the peak effect occurs in about eight hours, and significant effect of a single oral dose is still present at eighteen hours; its elimination is complete or near

complete in three days. It can be seen on the one hand that cumulation is involved in the maintenance dosage, and, on the other that effects of overdosage are of short duration. Parenteral digitalization can be accomplished by the intravenous or intramuscular routes using the same solution which is available containing 0.25 mg. per cc. Total digitalizing dose ranges from 1.0 mg. to 1.5 mg. Initially 0.5 mg. may be given, followed by additional 0.25 mg. doses at four to six hour intervals. Oral digitalization may be carried out by giving similar amounts at similar intervals, but is apt to require at least 1.5 mg. as the total dose. Maintenance parenterally is usually 0.25 mg. per day. Oral maintenance requires as a rule 0.375 mg. (that is one and a half of the 0.25 mg. tablets), but quite often 0.25 mg. is an adequate daily dose.

Lanatoside C (cedilanid), a glycoside of *Digitalis lanata*, differs from digoxin in that it possesses in its sugar moiety an additional glucose, and is acetylated. It also differs in that its absorption from the oral route is extremely poor. Otherwise its characteristics and use closely parallel those of digoxin. It is an excellent agent for rapid parenteral digitalization; it is used intravenously in doses totalling 1.2 mg. to 1.6 mg. While the total amount may be given in one dose in extreme situations, it is better to give perhaps three-fourths of the dose initially, then add further doses if needed to achieve the desired degree of digitalization. Maintenance is possible with an average dose of 0.2 mg. intravenously, per day if necessary, but not very practical. Oral use of this drug is unsatisfactory.

Desacetyl-lanatoside C is a relatively new product derived from lanatoside C by removal of the acetyl group from the sugar moiety. It is said to be more soluble and more stable than the parent drug, and is replacing Cedilanid on the market. The new compound bears the trade name Cedilanid-D. It does not differ materially from the older drug.

Acetyl-digitoxin is another relatively recent innovation. As its name indicates it is closely related to digitoxin, but retains the acetyl group present in the parent glycoside (either *purpurea* glycoside A or *lanatoside* A). It is well or completely absorbed orally. Its latent period, peak effect, and persistence are intermediate between digoxin and digitoxin. It remains to be determined whether this drug offers any advantages over existing compounds.

Gitalin, amorphous, is a mixture of glycosides obtained from *Digitalis purpurea*. It has been used in Europe for some time but has been introduced here only in recent years. Its characteristics are intermediate between digoxin and digitoxin. This drug is of special current interest because it has been stated, especially by Batterman,²⁰ that its therapeutic dose is less than half the toxic dose. Since in other digitalis preparations the therapeutic dose is at least two thirds of the toxic dose, gitalin would seem to offer a very great advantage in digitalis therapy. However, most pharmacologists believe that toxicity is merely an extension of therapeutic effect in digitalis. A recent report of a comparative study of gitalin and digitalis leaf, by Bryfogle, et al,²¹ indicates that in any given case, a decreased toxicity of one preparation was accompanied by a decreased potency, and an increased potency by an increased toxicity. It was found in this study that whereas 0.5 mg. of gitalin demonstrated a therapeutic potency similar to that of 0.1 gm. of digitalis leaf, a decreased toxicity or wider therapeutic range for gitalin could not be demonstrated.

Ouabain, a glycoside of *Strophanthus-G*, is an extremely potent cardiotonic agent. In doses of 0.25 mg. intravenously a significant degree of digitalization can be produced in less than five minutes. Since toxicity and efficacy go hand in hand the dangers of this drug are obvious. Nevertheless its clinical use may on rare occasions be justified, although possibly as a matter of desperation. Other agents have been mentioned for rapid digitalization

which are almost as quick and a great deal safer.

Acetyl strophanthidin is an acetylated aglycone derived from *Strophanthus kombé* glycosides. Its molecule therefore contains no sugar side-chain. Intravenous administration produces the most rapid and the briefest cardiotonic effect of all. It has been used in the performance of a digitalis tolerance test by Lown and Levine.⁴ It would seem to have chiefly experimental interest at this time.

In summary, then, there are a number of effective cardiotonic drugs available, each of which has certain special features. However they all have in common a strengthening effect on the myocardium; they all slow the ventricular rate in auricular fibrillation; and they all have toxic potentialities commensurate with their therapeutic properties. While there may be one ideal agent forthcoming, to date no single drug holds a manifest advantage over all others in all respects. It still is desirable to follow the standard advice to select one agent for routine use and one for rapid digitalization, and to become thoroughly at home with them. In my personal practice I find that digoxin serves quite well for routine and rapid use.

The question naturally arises as to when a patient is adequately digitalized. This is a clinical judgment. He is digitalized when the symptoms of heart failure are subsiding: when breathing is easier, rales are clearing, a gallop rhythm is corrected, the heart rate is tending toward normal: when good diuresis begins, and the patient looks better. In the presence of atrial fibrillation with initially high ventricular rate, digitalization can be recognized by a ventricular rate slowed to sixty or sixty-five, which does not speed up with exercise or with atropinization. When in doubt, doubling the maintenance dose for a few days until very early signs of toxicity are produced should settle the matter. When, in an emergency, the problem arises as to whether the signs present, especially where arrhythmias are involved,

are due to over-digitalization or not, one might resort to the digitalis tolerance test of Lown and Levine. This consists of giving small doses (0.15 to 0.3 mg.) of acetyl strophanthidin intravenously, at five to ten minute intervals, with continuous electrocardiographic observation, to the point of a therapeutic effect or a toxic effect. Potassium is given initially when toxic arrhythmia is strongly suspected; and procaine amide is used to control immediately any toxic effect provoked by the test.

Indications for digitalis. The presence of congestive heart failure is sufficient indication for the administration of digitalis. In heart failure associated with acute myocardial infarction digitalis should seldom be resorted to at once; oxygen, morphine and atropine may restore compensation in a few hours. If it is used, it should be done slowly and cautiously, in submaximal doses, and preliminary quinidinization or concomitant use of procaine amide should be considered. Angina pectoris is not a contraindication to digitalis when heart failure is present: compensation should improve coronary flow and may alleviate the angina.²² Digitalis is of distinct value though not the prime treatment in the heart failure associated with renal insufficiency, toxemia of pregnancy and cor pulmonale; it is of less value in thyrotoxicosis with failure, and of little or no value in heart failure due to anemia, and that due to myxedema. It should be remembered that the common etiological factors for heart failure frequently coexist with some of the more questionable indications for digitalis; in these situations the additional diagnosis should be recognized and the failure attributable to it treated accordingly. In rheumatic fever with failure, as with other types of carditis, digitalis is of limited value, and may be dangerous; however, in selected cases its cautious use may be rewarding. In the presence of complete A-V block, congestive failure is again an indication for digitalis. In partial A-V block²³ there is a relative contraindication; the possibility of complet-

ing the block must be weighed against the clear and present danger of uncompensated heart failure; moreover, it is possible that restoration of cardiac efficiency may, by improving coronary flow, actually produce a net result beneficial to the conduction in junctional tissue. Here also atropine might protect conduction to some extent.

Digitalis Intoxication. Toxicity is inherent in the drug. When a therapeutic effect has been obtained it is known that 60 to 70 per cent of the toxic dose has been given. When bigeminy occurs as the result of digitalis it can be assumed that 50 to 80 per cent of the lethal dose has been given. Toxic reactions are increasingly frequent, apparently because of the increasing numbers of older patients with severer heart disease resulting from longer preservation of life in an aging population; also because of treatment methods which commonly lead to depletion of body electrolytes; in addition it is thought by many that the purified glycosides by avoiding early gastrointestinal symptoms fail to give the warning once provided by the whole leaf preparations. Since many of the symptoms of toxicity are simulated by the heart disease itself as well as by intercurrent illness, it is well to assess carefully the symptomatology beforehand so as not to be misled later.

There is a close relationship between the total body potassium and the effects of digitalis. Depleted potassium stores markedly increases the myocardial sensitivity to digitalis; and in animals at least hyperkalemia increases digitalis tolerance. Potassium deficiency is common in congestive heart failure as the result of anorexia, malnutrition, acidosis, low salt diets, mercurial diuretics, Diamox, resins, ammonium chloride, cortisone; also it occurs in certain cases of renal insufficiency and can readily be produced by hemodialysis technics.²⁴

The symptoms are many and varied; they are chiefly gastrointestinal, nervous, and cardiac. The first group ranges from nausea to diarrhea. Among the nervous

manifestations, changes in the higher faculties ranging from lassitude to acute psychosis are especially common in the elderly patient with advanced failure. Interesting manifestations are true vertigo, headache, and neuralgic pains about the face and in the extremities. A recent report by Zimdahl²⁵ mentions that potassium therapy given for a toxic arrhythmia also cleared the yellow vision which was present.

Excitability of the myocardium is increased by small doses of digitalis but is decreased by large doses, and this decrease goes hand in hand with increasing ventricular arrhythmia due to toxic doses. Toxic doses of digitalis increase the automaticity of the heart, which permits the occurrence of ectopic foci; and conduction is slowed. Thus ectopic foci tend to be isolated from one another, resulting in progressive chaos and eventual ventricular fibrillation.²⁶ The refractory period of the A-V node is prolonged by digitalis through its vagus effect, in small doses; this effect can be abolished by atropine. In large doses digitalis affects the node directly, and this effect is not abolished by atropine. Thus various degrees of A-V block may result from toxic amounts of the drug. It is probable that the vagal effect of digitalis is mediated by acetylcholine since this substance and digitalis share the properties of slowing conduction in the heart, and of producing intracellular loss of potassium and gain in sodium.⁵ Moreover it has been shown that stimulation of the vagus releases acetylcholine within the myocardium.²⁷ Such a relationship may account for the slowing by digitalis of the ventricular pacemaker in complete A-V block. Atropinization might be expected to prevent this acetylcholine effect. The cardiac manifestations of digitalis toxicity result from increased irritability (or automaticity), or depressed conduction, or from combinations of these: thus almost any arrhythmia and conduction disturbance is possible. Only bundle branch block is rare as a toxic effect.

A particularly difficult situation may

arise when paroxysmal atrial tachycardia at a rate slightly faster than the existing rhythm occurs; here more digitalis may lead to an increasing rate, then A-V block, with irregular ventricular rhythm, finally simulating impure flutter or rapid fibrillation. More digitalis may seem to be indicated, and may result in a fatality.²⁸ Bidirectional ventricular tachycardia is an uncommon though characteristic manifestation of severe toxicity. Zimdahl has discussed its treatment with potassium and gives an interesting interpretation of its mechanism.²⁵

Progression of the heart failure may be the only sign of toxicity. Initial treatment is obviously to withhold digitalis, and to resume it only when the symptoms are all absent, and then in smaller doses, inasmuch as the recently poisoned heart seems to have decreased tolerance for digitalis. Serious toxic states call for prompt correction of the predisposing factors, especially electrolyte disturbances mentioned earlier. Electrocardiographic monitoring and bedside availability of supportive agents, vasopressors, vasodepressors, cut-down set, oxygen, sedation, are all necessary throughout the crisis of major digitalis toxicity. The relationship between digitalis effects and potassium changes provides the basis for the nearest approach to specific therapy for toxic states. Most if not all of the arrhythmias are apt to respond to sufficient quantities of this cation. The following recommendations are made by Lown and Levine for the use of potassium.⁴ In the ambulatory patient with mild toxicity, give 5 to 7.5 grams of potassium chloride orally per day; for more severe cases give 5 grams as a stat dose, then continue it in divided doses. As prophylaxis in the use of mercurials, give 5 to 7.5 grams the day of and the day after each injection. If the patient is acidotic use the citrate or the acetate instead of the chloride. In the acutely or severely ill patient they prefer to give the potassium salt intravenously. They use a solution containing 40 mEq. in 500 cc. of 5 per cent glucose in water, given over a period of

one hour, under electrocardiographic surveillance. This is repeated once or twice, if necessary, and is followed by oral maintenance. These authors reiterate that serum levels of potassium are not necessarily low when body potassium is depleted. They caution that oral potassium is capable of producing potassium toxicity even in the absence of anuria, and they feel that congestive heart failure without digitalis toxicity is not an indication for potassium therapy. This would seem to be sound advice because it is easy to see how indiscriminate or enthusiastic attempts to titrate digitalis and potassium against each other could result in grave confusion if not disaster.

Another agent of great value in toxic states is procaine amide. It is most useful in ventricular tachycardias, and is indicated when potassium is not at hand, or if this cation has failed. It may be given orally in doses of 0.5 to 1.0 grams with additional quarter gram doses hourly for several doses, and every six hours as a maintenance. Emergency intravenous use is practical, being given as a continuous drip at the rate of 25 mg. per minute, but reducing this rate by half after 300 mg. have been given. A maximum dose of 1.0 gram in one hour is advised. Hypotension from this drug is frequent and at times alarming; therefore, the blood pressure must be watched continuously, and the drip slowed or stopped promptly as needed. A vasopressor, preferably levo-phed must be at hand when procaine amide is used.

In conclusion I would like to say that digitalis with its many intriguing effects, with its complexities, its dangers, but most of all its great value in prolonging useful or at least more comfortable life, continues to hold its role as the physician's most fascinating ally and his most fortunate companion.

REFERENCES

1. Wollenberger, A.: The energy metabolism of the failing heart and the metabolic action of the cardiac glycosides. *J. Pharmacol. & Exper. Therap.* 97:311, 1949.
2. Best, C. H. and Taylor, N. B.: *Physiological Basis of Medical Practice*. Baltimore, The Williams & Wilkins Company, 1955.
3. Kay, C. F.: The clinical use of digitalis preparations. *Circulation* 12:116, 291, 1955.
4. Lown, B. and Levine, S.: Current concepts in digitalis therapy. *New England J. Med.* 250:771, 819, 866, 1954.
5. Proctor, C. D., Rebar, J. Jr., Tigerman, B.: A hypothesis for a mechanism of cardiac glycoside action, *Am. N. Y. Acad. Sci.* 62:377, 1955.
6. Burch, G. E. and Winsor, T.: *A primer of electrocardiography*. Philadelphia, Lea & Febiger, 1949.
7. McMichael, J. and Sharpey-Schafer, E. P.: The action of intravenous digoxin in man. *Quart. J. Med.* 13:123, 1944.
8. Hammond, J. and Whitaker, W.: Effects of intravenous digoxin in auricular fibrillation. *Brit. Heart J.* 19:23, 1957.
9. Hyman, A. L., Jacques, W. E., and Hyman, E. S.: Observation on the direct effect of digoxin on renal excretion of sodium and water. *Am. Heart J.* 52:592, 1956.
10. Read, W. O. and Kelsey, F. E.: Effects of digoxin on myokinase activity. *Sci.* 125:120, 1957.
11. Farah, A.: On the combination of cardioactive glycosides with serum proteins. *J. Pharmacol. & Exper. Therap.* 83:143, 1945.
12. St. George, S., Naegle, C. F., French, F. S., Rosenman, R. H. and Friedman, M.: A quantitative study of the digitoxin content of edema fluids. *J. Clin. Invest.* 32:1222, 1953.
13. Sjoerdsma, A. and Fischer, C. S.: The fixation of radioactive digitoxin by isolated hearts. *Circulation* 4:100, 1951.
14. St. George, S., Bine R., Jr. and Byers, S. O.: The renal excretion of digitoxin in the acute and chronic cardiac patient. *Circulation* 6:853, 1952.
15. Okita, G. T., Kelsey, F. E., Talso, P. J., Smith, L. B. and Gelling, E. M. K.: Studies on the renal excretion of radioactive digitoxin in human subjects with cardiac failure. *Circulation* 7:161, 1953.
16. Szent-Gyorgyi, A.: *The Chemical Physiology of Contraction in Body and Heart Muscle*. New York, Academic Press, 1953.
17. Falk, G.: Nonspecificity of ATP contraction of living muscle. *Sci.* 123:632, 1956.
18. Martin, G. S.: *Biological Antagonism, The Theory of Biological Relativity*. Philadelphia, Blakiston, 1951.
19. Titus, E., Weiss, H., Hadju, S.: Isolation of a cardiac active principle from mammalian tissues. *Sci.* 124:1205, 1956.
20. Batterman, R. C., DeGraff, A. C., Rose, O. A.: The therapeutic range of Gitalin (amorphous) compared with other digitalis preparations. *Circulation* 5:201, 1952.
21. Bryfogle, J. W., Santilli, T., Saltzman, H. A., Bellet, S.: Therapeutic and toxic indexes of digitalis: A comparative study of Gitalin and digitalis leaf. *N. England J. Med.* 256:767, 1957.
22. Gold, H., Otto, H., Kwit, N. T., and Satchwell, H.: Does digitalis influence course of cardiac pain? *J.A.M.A.* 110:859, 1938.
23. Blumgart, H. L. and Altschule, M. D.: Should digitalis be administered to patients with preexisting partial heart block? *Am. J. M. Sc.* 198:455, 1939.
24. Merrill, J. P.: *The Treatment of Renal Failure*. Grune & Stratton, 1955.
25. Zimdahl, W. T. and Townsend, C. G.: Bidirectional ventricular tachycardia due to digitalis poisoning. *American Heart J.* 47:304, 1954.
26. Moe, G. K. and Mendez, R.: The actions of several cardiac glycosides on conduction velocity and ventricular excitability in the dog heart. *Circulation* 4:729, 1951.
27. Lowe, O.: The Humoral Transmission of nervous impulses. *Harvey Lectures* 1932-33, 28:218.
28. Decherd, G. M., Jr., Herrman, G. R., and Schwab, E. H.: Paroxysmal supraventricular tachycardia with A-V block. *Am. Heart J.* 26:446, 1943.

PREGNANCY FOLLOWING
PULMONARY RESECTION *

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E. E. DILWORTH, M. D.

SHREVEPORT

Thoracic surgery in recent years has made great strides and an ever increasing number of patients who have had pulmonary and cardiac surgery are now presenting themselves for obstetrical care. The triumvirate of "blood, anesthesia and antibiotics" plus improved techniques have broadened the horizon of chest surgery. As yet the literature is rather meager in regard to the number of patients who have had pulmonary resection and subsequently delivered. In 1956, Foley, Wesp and Reichman¹ added two cases to the 62 which they were able to find in a survey of the literature. Any additional experiences in managing these patients would be of value.

MATERIAL

During the period from 1950 to 1956, we have had 9 patients who underwent pulmonary resection and subsequently delivered on 14 occasions. Undoubtedly, other patients have become pregnant and delivered in outlying districts. Confederate Memorial Medical Center is an 850 bed general hospital with an affiliated 150 bed tuberculosis unit. In northern Louisiana it serves as a primary referral center for indigent tuberculous patients who require thoracic surgery. After their convalescent period is over many of these patients are returned to their original tuberculosis hospital and follow-up in regard to obstetrical history is not readily obtainable.

The historical aspects of this subject have been amply detailed by previous workers.²⁻⁴

Six of our patients had a lobectomy and the other 3 had a segmental resection. In all instances the surgery was undertaken because of tubercular lesions. Because of the factors enumerated in the foregoing

paragraphs our figures are weighted with patients with tuberculosis. Admittedly, other complications usually entailing thoracic surgery, e.g., lung cancer, are infrequent in females in the childbearing group.

We have not included any thoracoplasties in this study as it has been well established that pregnant patients who have undergone thoracoplasty tolerate pregnancy well.³⁻⁵

Pulmonary resection preceded the subsequent pregnancy by eleven to thirty-eight months and the patients ranged from 17 to 39 years of age and 7 were multiparous. Labor and delivery were uncomplicated and 14 healthy viable infants were obtained. A minimum of analgesia was used during labor and delivery was accomplished with local pudendal block or no anesthesia.

The anticipated complicating factor was dyspnea. None of our patients experienced severe dyspnea, and mild to moderate dyspnea was noted in only 3 of the 14 pregnancies.

To date we have had no cases of pulmonary resection during pregnancy which later delivered here. However, pulmonary resection has been accomplished successfully during pregnancy in a limited number of cases.¹

DISCUSSION

We are in accord with the impressions of other workers that the pregnant patient who has undergone prior pulmonary resection tolerates pregnancy well. Patients who have undergone pneumonectomy may be more susceptible to respiratory difficulty. Dyspnea of any significance was not apparent in our 9 cases who had previous lobectomy or segmental resection. The pregnant patient who has undergone pulmonary resection compensates for moderate pulmonary insufficiency by increasing her tidal volume and is not prone to experience dyspnea.³ In general our patients tolerated pregnancy so well and offered so few complaints that more frequent visits or special tests were not deemed necessary. One cannot deny that studies of pulmonary function prior to and

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during pregnancy would be of aid to confirm one's clinical impression.

Succinctly, Gaensler's statement that "patients with restrictive ventilatory insufficiency, who are not dyspneic at rest or during slightest exertion should tolerate pregnancy without difficulty", affords a clinical yardstick.

SUMMARY AND CONCLUSIONS

1. Nine cases of pulmonary resection with 14 subsequent pregnancies and deliveries have been presented.

2. Pregnancy was tolerated without difficulty except for mild to moderate dyspnea noted during 3 pregnancies.

3. These patients offered amazingly few complaints and no unusual precautions or special tests were deemed necessary.

REFERENCES

1. Foley, F. E., Wesp, J. E., and Reichman, S. C.: Pulmonary resection in pregnancy, *Dis. of Chest* 29:433, 1956.
2. Corner, G. W., Jr., and Nesbitt, R. E. L., Jr.: Pregnancy and pulmonary resection, *Am. J. Obst. & Gynec.* 68:903, 1954.
3. Gaensler, F. A., Patton, W. E., Verstraeten, J. A., and Badger, T. L.: Pulmonary function in pregnancy, *III, Am. Rev. Tuberc.* 67:779, 1953.
4. Folsome, C. E., and Kuntze, C. D.: Pregnancy following major thoracic surgery for tuberculosis, *Am. J. Obst. & Gynec.* 65:1319, 1953.
5. Schaffer, Geo., and Epstein, H. E.: Lobectomy for pulmonary tuberculosis during pregnancy, *Am. J. Obst. & Gynec.* 64:188, 1952.

ACUTE BLOOD LOSS

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SHREVEPORT

Acute blood loss is one of the major catastrophes to which the body reacts by manifesting certain signs and symptoms which we have come to know as shock.

Before going into blood loss specifically, it is well to review the physiology and clinical picture of shock. Shock is a symptom complex which can be initiated by many causes, all of which lead to a decrease in the effective circulating blood volume. The following pathological conditions will cause shock: (1) Failure of the heart to be an efficient propelling mechanism as in heart failure or cardiac

tamponade. (2) Extreme internal fluid shifts removing fluid from the intravascular space as seen in burns, crush injuries, toxins acting on the blood vessel wall, and electrolyte imbalance. (3) Hemorrhage.

MAJOR PHYSIOLOGIC CHANGES

The following are major physiological changes, all or any of which may be present during shock:

I. Reduction of the Effective Circulating Blood Volume.

In shock from blood loss or fluid shifts, there is a decrease in the circulating blood volume. A direct relationship has been found between the reduction of blood volume and the severity of shock. Evans⁴ found in using his Blue Dye Method that signs of shock usually do not appear until the blood loss is 15 per cent of the total volume and severe shock is present after reducing the volume by 38 to 40 per cent.

II. Reduction in Cardiac Output.

There has been found to be a reduction in the cardiac output in patients in a state of traumatic shock based on a failure of the venous return to the right auricle. Cardiac tamponade or myocardial contusion also may lead to a reduction in the ability of the heart to circulate blood.

III. An Alteration in Peripheral Circulation.

In the early stages of shock there has been found a definite vasoconstriction which shunts a large per cent of the blood away from the capillary beds of nonvital organs, thereby decreasing the volume of the vascular bed. This mechanism aids in maintaining a normal blood pressure.

IV. Abnormal Humoral Factors.

The studies of Zweifach, et al,¹¹ have brought to light this humoral concept. These investigators demonstrated vasoexcitatory material (VEM) present in the blood stream during the early reversible phases of shock and vasodepressor material (VDM) present during the irreversible stage of shock. VEM is thought to be produced by the kidney during anoxia and VDM by the liver and to a lesser

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extent by the spleen and muscle under the same conditions. VEM is thought to be largely responsible for the vasoconstriction during the compensated phase of shock. During this stage, when the liver is well oxygenated, it is thought that the VDM is inactivated by the liver. As shock progresses and the liver becomes anoxic, it loses its ability to inactivate VDM and the accumulation of this substance plays a part in shock becoming irreversible.

V. Presence of Bacterial Toxins.

It has been shown that filtrates of *Clostridium welchii*, when injected intravenously, cause a shock-like picture. Some investigators have felt that the irreversibility seen in hemorrhagic shock is due to the proliferation of these or other organisms in the anoxic liver or muscle.

SYMPTOMS

The symptoms of shock are well known to all of us. In the far advanced case, one finds the patient cold, clammy, gray in color, with a rapid, thready pulse and a blood pressure that is low and sometimes not obtainable. If the blood pressure is obtainable, there is usually a low pulse pressure. In patients who are on the verge of going into shock, movement of the patient from the bed to the x-ray table or elevation of the head of the patient may cause a profound drop in blood pressure. The veins will usually be empty. It is difficult to detect early criteria of shock and great stress should be placed on the type of injury sustained. Patients with major fractures, for instance, even without external blood loss, will almost always go into shock if not treated with blood replacement. Probably the most readily available physical finding that is found to correlate most often with shock is the simple reading of the blood pressure. The first change is the decrease in the pulse pressure followed by an actual drop of the systolic pressure to figures below 100 mm. of mercury.

LABORATORY

The laboratory offers little help in the early recognition of shock. Ideally, a determination of the blood volume would be

of the most value but this is not a practical test to be done on the severely injured patient as an emergency procedure except where radioactive studies are available. The red cell count and hemoglobin determination are both easily and rapidly obtained in any laboratory. However, there is some confusion in the literature as to their interpretation within the first hour after blood loss. It is the opinion of many that neither hemodilution nor hemoconcentration begins before the first one to two hours. If this be true, then these determinations done within the first hour would be of no value because, though the total blood volume is reduced, any sample taken would have a normal hemoglobin concentration and number of cells per cc. Cole and Elman³ state in their text that in dogs hemodilution begins within the first hour. They note though that there is insufficient data to indicate the exact time of its onset in man. Despite the conflicting ideas as to the value of the early hemoglobin and red cell determination, recent experience has led me to adopt the following opinion. If these tests are within normal limits, they are of little help in determining the volume of blood lost. However, if they are definitely below normal, that is, below 10 Gms. of hemoglobin and 3.5 million red blood cells, severe blood loss is indicated and the ultimate prognosis guarded. If there is no visible blood loss, one must search for and find concealed hemorrhage.

TREATMENT

There are, of course, certain priorities in the treatment of the injured patient and these must be followed whether blood loss is present or not. Of primary importance are an open airway, and the stopping of all gross hemorrhage by either direct ligation or pressure dressings. The alleviation of pain should be accomplished by intravenous narcotics given in small doses and repeated only as necessary to avoid cumulative effects.

Many times there is considerable difficulty in accomplishing a satisfactory venous puncture on a patient in profound

shock. In these cases, one can insert a thirteen to fifteen gauge needle into the femoral vein in the inguinal region as one would in doing a femoral puncture to obtain blood. A suitable polyethelene catheter is then threaded through this needle up into the iliac veins and the needle removed. Unless one has the proper needle and the proper size polyethelene tubing always available in the emergency room, this method is not applicable and the routine cut down on the medial aspect of the ankle is probably the most satisfactory procedure for rapidly initiating intravenous therapy.

There are some advocates of intra-arterial transfusions.^{10, 13} However, I believe the preponderance of experimental evidence^{5, 6, 8, 12} now indicates that the rate of administration is of more importance than the route. In severe shock, blood should be given rapidly under pressure until the clinical signs improve. This can be done either by producing a positive pressure in the blood bottle or by pumping it in with a syringe and a three-way stop cock. If positive pressure is produced in the blood bottle, constant attention is required to keep air from being pumped into the patient.

Where blood loss is only moderate and the patient not in shock, glucose and saline are suitable as initial treatment while cross matching blood. When shock is more severe, some colloid solution is required for emergency treatment. It used to be that plasma was given under these conditions and it was found to be a very suitable temporary measure. However, it has three drawbacks. One is its potential for causing serum hepatitis. Secondly, its supply is limited and, last, it is expensive. In the last five to ten years, a great deal of experimental work has been done in finding and developing blood and plasma substitutes for stock piling in case of mass casualties. The two most commonly used at the present time are Dextran and Polyvinylpyrrolidone, known as PVP. Both of these substances are easily available commercially, considerably cheaper than

plasma, easily sterilized and have no hepatitis potential. They are in no way to be thought of as true substitutes for blood, but only as emergency agents to be used until blood can be typed and cross matched. In this role, they are found to be extremely useful, producing a rapid and satisfactory elevation of blood pressure in the shocked patient. At the present time, both are being extensively studied for undesirable side effects. There are some reports in the literature indicating a rare bleeding tendency following usage of large amounts of Dextran. Nittis,⁷ et al, reported no significant bleeding time changes when the amount was kept below 1500 cc.

Seegers, et al,⁹ in an in vitro study, indicated that Dextran inhibited the formation of a prothrombin derivative. However, this was counteracted by the addition of a very small amount of thrombin which should be present in the average patient. Much more work on this aspect must be done before this is clarified. Recently, a study¹ has revealed that between 35 and 50 per cent of PVP is stored in the body for at least twenty months. It has been found in the spleen, lymph nodes, liver, bone marrow, adrenal cortex and, occasionally, in almost all organs. As yet, there has been found no definite evidence of damage from the storage of this chemical, but there was some question in one study of a slight impairment of the hepatic function. Both of these products have been used extensively and serious complications are so rare that they are considered safe for clinical use.

The rapid infusion of 500 to 1000 cc. of Dextran has, in my experience, been satisfactory to maintain all but the most profoundly shocked patients until suitably matched blood is available. However, when hemorrhage is severe, low-titer type-O, Rh negative blood may be given without cross matching, but this should be done only as a life saving procedure. Since that type of blood is seldom obtainable, blood can also be given on type, that is, take time to type the patient and, if necessary, give

his type without cross matching or on a short cross match.

The indication for vasopressor drugs in the treatment of shock is very limited. The only drug in my experience which has been effective is nor-epinephrine or Levophed, as it is commercially known. There are two indications for its use. First, it can be given to tide the patient over until adequate blood is available. Secondly, it will usually restore blood pressure to a satisfactory level when shock is so profound that the pressure will not stay up despite massive transfusions. This, unfortunately, is not always permanent. The rate of administration is always governed by the response of the blood pressure. It should not be given over long periods of time in the leg veins if other sites are available, because it may cause a slough or even loss of an extremity.

Intravenous Cortisone is another adjunct which is sometimes very useful in profound shock and should be given to all cases not responding to usual measures.

The anoxic liver has been indicted in the production of irreversible shock through the production and inability to inactivate VDM and the possible proliferation of *Clostridium welchii* within its biliary radicles. On the basis of these concepts, intravenous sodium dehydrocholate, which has been found to increase the arterial blood flow through the liver, is of theoretical value and may be tried in severe shock. Antibiotics are also indicated.

The ideal treatment of hemorrhagic shock is, of course, adequate amounts of typed and cross matched blood. It is the only solution capable of transporting oxygen in the body and, at the same time, adding a protein rich fluid which will maintain a permanent expansion of the blood volume. The volume of blood required will vary with the type of injury and the amount of blood lost so that it is difficult to set rules for replacement. As a general rule though, correlating with Evans' findings on blood volume studies, mild shock indicates a loss of approxi-

mately 1000 cc. of blood and severe shock, a minimum loss of 2500 cc.

Massive blood replacement is not without its complications. There has been much discussion of citrate intoxication. In a recent study of patients receiving large quantities of blood, Bunker, et al.,² concluded that the greatest danger from citrate intoxication was in the following groups of patients: (1) those with severe liver disease; (2) those with mechanical obstruction to the hepatic blood flow; (3) in infants receiving exchange transfusions; (4) in patients operated under hypothermia; and (5) those requiring rapid resuscitation with huge quantities of blood.

The action of an increased citrate blood level is to decrease the level of ionized calcium which may cause tetany and, by direct action on the heart, cause hypotension. In the above noted study, the patients with elevated Lee-White coagulation times could not be correlated with a depression of the ionized calcium. They felt that the defects in the coagulation mechanism seen in massive blood replacement were more likely due to the almost total absence of platelets and the diminished titer of prothrombin accelerator in stored blood. They concluded that intravenously administered calcium is not very satisfactory in the treatment of citrate intoxication and that when the possibility of intoxication can be anticipated, some anticoagulant other than citrate should be used.

There is no general agreement that calcium is not of value however, and, in my opinion, it should be given. Some cases have shown a remarkable response to it. The required dosage is almost impossible to determine. It lies in the range of 10 cc. of 10 per cent calcium chloride or gluconate for each 3 to 5 units of blood. It should never be added directly to the blood since it would cause clotting in the bottle.

Mismatched transfusions are probably most common in the rush of resuscitating a patient in shock. A complete discussion

of this complication will not be attempted in this paper. I would like to emphasize, however, the difficulty sometimes encountered in recognizing a transfusion reaction in the profoundly shocked patient. If any question of one arises, it is a simple matter to take a sample of blood, centrifuge it, and inspect the serum for evidence of hemolysis as indicated by a red discoloration.

As we all know, there is a direct relationship between the length of time blood has been stored and its potassium concentration. In view of this, the danger of potassium intoxication should be kept in mind. The only patients in whom this would be a factor are those with existing high potassium levels as seen in the crush syndrome and renal shutdown. In cases of this sort, only blood less than three days old should be used if possible.

Finally, overloading patients with blood with the ensuing congestive heart failure is, in some cases, a difficult complication to avoid. In massive hemorrhage with no response to blood replacement, it is difficult to know how much blood to give rapidly. When signs of heart failure appear, such as rales, pink, frothy sputum, and elevated venous pressure, one must, of course, stop transfusions and initiate the usual treatment for failure. If these symptoms appear in a patient who is still in shock, the prognosis is all but hopeless.

SUMMARY

In summary then, acute blood loss of great magnitude carries a very guarded prognosis. A rational treatment of this condition requires an understanding of the basic physiology of shock, as well as familiarity with the use of plasma, plasma substitutes, whole blood, and other drugs which may be indicated, such as Cortisone, Nor-epinephrine (Levophed), and antibiotics. We must finally know the complications arising from the use of the above agents and be prepared to treat them as they arise.

REFERENCES

1. Altmeier, W. A. and others: *Arch. Surg.* 69:309, 1954.
2. Bunker, J. P. and others: *J.A.M.A.* 157:1361, 1955.
3. Cole, W. H., and Elman, R.: *Textbook of General*

Surgery, Appleton-Century-Crofts, Inc., New York, 6th Ed., 1952.

4. Evans, E. I., Hoover, M. J., James, G. W. III; and Alm, T.: *Ann. Surg.* 119:64, 1944.

5. Maloney, J. V., Jr., Smythe, C. M., Gilmore, J. W. and Handford, S. W.: *Surg. Forum*, 4:484, 1953.

6. Maloney, J. V., Jr., Smythe, C. M., Gilmore, J. W., and Handford, S. W.: *Surg., Gyn. & Obst.* 97:529, 1953.

7. Nittis, S., Ladopoulos, C., and Schwimmer, M.: *Bull. N. Y. Med. College* 16:86, 1953.

8. Richards, R. C., and Hansen, F. L.: *Surg. Forum*, 4:478, 1953.

9. Seegers, W. H., Levine, W. G., and Johnson, S. H.: *J. App. Physio.* 7:617, 1954.

10. Seeley, S. F., Nelson, R. M.: *Int. Abst. of Surg.* 94:209, 1952.

11. Shorr, E., Zweifach, B. W., and Furchgott, R. F.: *Science* 102:489, 1945.

12. Thellen, E. O., Paul, M. H., and Gregg, D. E.: *J. App. Physio.* 7:248, 1954.

13. Veal, J. K., Russell, A. S., and Stubbs, D.: *Am. Surgeon* 18:1150, 1952.

CLINICAL USE OF THE ARTIFICIAL KIDNEY

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The artificial kidney is a standardized therapeutic procedure that has become one of the tools of modern medicine. Its use is no longer limited to research, but instead, it has benefited patients from 1½ to 80 years of age. It is a powerful tool of unquestionable value which in its present form involves only a slight risk. The actual procedure does not involve the patient's own kidney, but is instead a method of "washing" the blood and thereby removing "wastes" from the body. By many measurements, such as the removal of urea, the man-made apparatus is as efficient as the natural kidney. Clinically, the man-made apparatus is quite capable of keeping a patient without kidney function alive for considerable lengths of time. Perhaps it is not effective in completely replacing the natural kidney, but attempts at permanent replacement by kidney transplant or by plastic prosthesis appear encouraging. Certain phenomena of uremia, e.g., the anemia and the weight loss, are refractory. The length of the present use of the procedure is usually limited by technical factors. These are constantly being improved.

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All of the artificial kidney methods depend upon the same principle of physical chemistry that Abel used in 1913.¹ The wastes are removed by dialysis. This can be illustrated as follows: A membrane of cellophane has tiny, submicroscopic holes in it (Figure 1). These holes are large

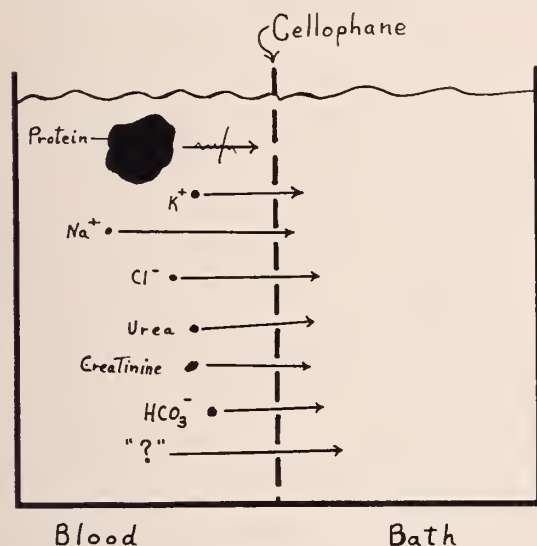


Figure 1

enough to let urea, NPN, potassium, and sodium through, but are not large enough to let proteins (albumen, globulins), or blood corpuscles pass. If the blood is on one side of the cellophane, and water is on the other side, the urea of the blood will go through the cellophane into the water. To prevent essential salts like sodium chloride from leaving the blood, a salt solution like Ringer's is used instead of water. In this way there is the same concentration of sodium on each side of the cellophane, and from the start of dialysis it enters the blood as fast as it leaves (Figure 2). Albumen, globulins, red cells, white cells, and platelets do not leave the blood, and bacteria cannot enter through the cellophane. Thus, only small molecule wastes and nonessentials leave the blood and enter the bath water. This "washes" the blood.

Cellophane sheets and cellophane tubing (common sausage casing) are used outside the body; the peritoneal membrane can be used. The bath is 100 liters of tap water with sodium chloride, sodium bi-

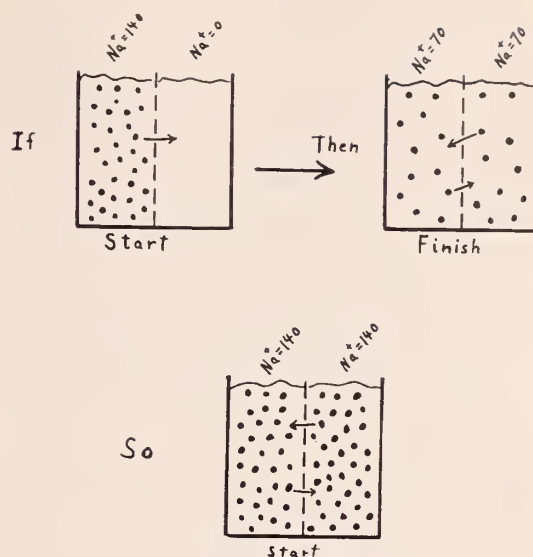


Figure 2

carbonate, carbon dioxide, calcium chloride, magnesium chloride, and glucose added. It is sterilized only when the peritoneum is used.

Of the many variations used,² one is probably the most valuable, and has virtually replaced the rest. This method involves the circulation of blood outside the body. Blood is continually withdrawn from an artery or vein, passed through a plastic tube, then through a cellophane tube, and to another plastic tube to conduct it back into a vein. Thus a continuous flow of blood is "washed" while in the cellophane tube. In this system the blood acts very much like water in an automobile cooling system; it carries urea and other wastes from the body to the apparatus and returns to the body to pick up more waste material. The blood flows at a rate of about a pint every two minutes. Though the body may contain only 13 pints of blood, 180 pints flow through the apparatus in the usual six hour period, or, all of the patient's blood goes through the apparatus an average of about 15 times. The blood does not clot because of the heparin added.

Of the other methods used, peritoneal lavage, or dialysis across the peritoneal membrane,³ is probably the most effective. Twenty liters of sterile Ringer's solution is passed through the abdominal cavity daily. The procedure is carried on day

and night, perhaps for days. Besides the hazard of infection, it takes days to do what the above procedure will do in hours. It is no longer more effective than the cellophane method in removing edema, and is certainly less desirable.

Intestinal lavage is effective in removing potassium. It fails to help the patient in renal failure to any great extent, and usually results in giving the patient large quantities of water, which is undesirable. This same removal of potassium can be had by simple gastrointestinal suction, or by other means.

The present apparatus is simple,⁴ compact, and stored sterile, ready to use. It can be moved and requires minimal upkeep. It has all of the advantages of the earlier Kolff rotating drum apparatus, and by design has eliminated most of the technical hazards, as follows. Because of the pressure relationships, a leak in the cellophane would not allow entry of unsterile bath water into the blood as in previous equipment. Because of the pumping arrangement, the circuit can be made from vein to vein. This eliminates the necessity of an arterial cutdown, and, more important, the risk of removal of arterial blood from a seriously ill patient. This taking of even a small part of the critically low output of a failing heart has been fatal in many instances in the past. It is now possible to remove large quantities of water (edema) from the body by high pressure ultrafiltration, thus matching the previously held advantage of peritoneal lavage.

PRESENT CLINICAL USES

The procedure of the artificial kidney has proven itself in acute renal failure ("lower nephron nephrosis"), drug poisoning, some situations in chronic kidney failure, and as a stepping stone for further procedures, such as the transplanting of the human kidney. It may prove to be of value in shock and in acute glomerulonephritis.

ACUTE RENAL FAILURE ("LOWER NEPHRON NEPHROSIS")

The treatment of acute renal failure remains the principal use of the artificial

kidney. This includes the kidney shutdown that may follow:

1. Shock from bleeding or from any other cause
2. A transfusion reaction
3. A crush injury without hypotension
4. Surgery without shock
5. Heavy metal poisoning, e.g., mercury or bismuth
6. Carbon tetrachloride poisoning, in association with liver damage (and thereby little rise in BUN)
7. Hemolysis of an illness, or of the infusion of distilled water (e.g. during a transurethral prostatectomy)
8. Postpartum (including perhaps the syndrome of renal cortical necrosis as a variant)

All of these causes provoke a similar kidney damage and clinical picture.⁵ They differ in the severity of the kidney damage and in the nature of the provoking illness. Almost all of this group of patients will show signs of return of their own kidney function within three weeks, should they survive that long. The mildest will only fail for a few days. Everyone can recall a memorable case that survived twenty days of oliguria, but these few cases are distinctly the exception. The vast majority have either started passing urine or have died by the tenth day. About 50 per cent of the cases do each. An infection or the presence of damaged tissue greatly hastens the decay of the patient and may bring about full blown "uremia" in three to four days. These burdens should be vigorously treated by antibiotics and debridement. Conversely, the presence of kidney failure renders the patient incapable of resisting an infection and unable to heal his wounds.

All patients with acute renal failure should be treated by the conservative regime.⁶ This consists of three essentials: (1) controlled restriction of water intake, (2) a high calorie, no protein intake, and (3) measures to control serum potassium. To this one may add a fourth, the maintenance of a fairly normal serum sodium.

Water is restricted to 500 cc. plus a replacement of loss by suction and the urine volume when significant. Dehydration is to be avoided; it mimics the syndrome of uremia. Gastrointestinal suction will remove significant quantities of water and potassium, and thus allow the giving of extra glucose in water intravenously.

A high calorie intake, or really a 1000 calorie intake, is designed to delay tissue breakdown, and thus inhibit the progress of uremia. Patients with acute renal failure will lose weight in spite of 2000 calories a day as glucose. It is the feeling of most observers that 100 grams of glucose a day gives about as much benefit as 400 grams. No good studies are available on this point. Butter by mouth is limited by vomiting, and those who laud its use exclude any patient who vomits. Its absorption in patients not so ill is questionable. Intravenous 10 to 50 per cent cottonseed oil emulsion can be used. About 500 cc. of 20 per cent glucose per day is the usual.

Potassium restriction should be as complete as possible unless the patient clearly shows that a high serum potassium will not be a problem. This includes the use of sodium penicillin instead of potassium when high doses are wanted.* Two million units of K⁺ penicillin contain about 3 milliequivalents of potassium. About half of the patients in acute renal failure have a significant rise in serum potassium, but only a few of these manifest potassium intoxication.⁷ Most deaths under good conservative management will be without potassium intoxication. The electrocardiographic changes are well known; they progress from an elevation of the T waves (with symmetry of the upswing and downswing) to prolongation of the PR and QRS intervals, then a voltage decrease, and then standstill. The rise in serum potassium can be aborted by the use of resins (e.g. SKF #648) either orally or

as enemas.⁸ Gastrointestinal suction impedes it; intravenous glucose and insulin temporarily lower it; digitalis, sodium, and calcium pharmacologically antagonize it. Calcium is very predictable, but also limited. An intravenous calcium gluconate drip is a dependable way to gain time in serious potassium intoxication, in order to do something more lasting.

The serum sodium may be low as a result of the dilution by intravenous glucose in water (containing levophed or such) given during the initial shock that caused the renal failure or immediately postoperative. The author believes that the serum sodium should be maintained near normal for three reasons. An occasional hyponatremic patient in acute renal failure will get enough return of renal function with hypertonic sodium by vein to make the difference. Azotemia of the hyponatremic syndrome can be mistaken for acute renal failure. The rise of potassium is more serious if the sodium is low.

It is when the conservative regime alone fails that the artificial kidney finds its place in about half of the cases. When the decision is difficult, it is far wiser to use the artificial kidney than to wait, as it is difficult to predict exodus in this disease. The serum potassium and the electrocardiogram should be carefully followed to predict exodus from hyperkalemia, but this is not the common way of death; and after one run on the artificial kidney, it is rare. Congestive heart failure is common; it is aggravated by any excess of water given. In the cases during World War II, it is described as the commonest cause of death and occurred on about the seventh to eighth day.⁹ This has since been explained as a result of the excessive amounts of water given in those days. Perhaps this is not the sole cause of congestive heart failure; it is often noted to come on overnight and progress to severe pulmonary edema very quickly, in spite of the fact that no water had been given in twenty-four hours! One will find aminophyllin and parenteral digitalis somewhat effective, but a phlebotomy

* The sodium salt should also be used in other forms of renal failure, chronic or so called "pre-renal azotemia", when high doses are called for. It is available from Eli Lilly, Indianapolis.

of 300 to 800 cc. more so. After rescuing the patient from this hazard, he is frequently in dire straits within twenty-four hours from the rest of the picture of uremia. The advent of congestive heart failure, then, is an evidence of impending death. The author has found that the quality of the mitral first sound at the apex is a good index of the patient's status. As the patient declines, it loses its crispness and becomes muffled as it does in rheumatic or diphtheritic myocarditis. Most often the patient will expire suddenly, in the middle of a sentence. He will have been jittery and restless, with a short interest span for two or three days. For two or three nights he will not have slept, except for catnaps with the light on. In the few patients the author has had occasion to observe terminally, the blood pressure rapidly falls in the conscious patient to unobtainable levels, and then the patient suddenly drops off. The pupils may dilate while he speaks. It is the picture of a rapid central shock as in a massive coronary, a large pulmonary embolus, or cardiac arrest. The electrocardiogram in those instances recorded at the time, shows a relatively normal pattern to continue after clinical death (loss of consciousness, pulse, respiration, and blood pressure), thus virtually ruling out cardiac arrest. Post mortem examination fails to show the embolus in the lung. Perhaps this is severe "forward heart failure," a day or two after "congestive heart failure". If the patient is very ill with uremia, the taking of arterial blood, i.e. even a small part of the heart's output, will precipitate the same irreversible shock. Dialysis, vein to vein, has been lifesaving. A successful run on the artificial kidney will strikingly restore cardiac function.

Unless there is some associated heart disease, the mitral first sound at the apex will sharpen to normal within about an hour on the artificial kidney, and a gallop will often disappear in that time. The general appearance of the patient will usually show a striking change. He will

appear less ill; he will become more attentive to his surroundings and maintain a normal interest span. Vomiting quickly subsides, then nausea; it is not unusual for an appetite to appear after four to five hours of effective blood flows. By auscultation, intestinal peristalsis, which had been virtually absent for two to three days may appear and become normal. He then sleeps well; frequently he will have a normal bowel movement the next day. Essentially, after the deterioration of seven days of severe oliguria, the patient has become clinically and severely uremic. The artificial kidney is used for six to eight hours, and the patient is clinically improved to about where he was on the second day. He then is allowed to repeat his decline under observation and conservative therapy, and the artificial kidney is again used. This cycle, barring mishaps, is repeated on and on until his own kidneys start to function. Most patients with the "lower nephron nephrosis", if kept alive this way for three weeks, will have a return of their own kidneys. In those clinical situations in which no return has occurred in three weeks, the disease is probably something else. During this three weeks an infection may subside, and the patient may decline less rapidly. Should an infection get out of hand, the benefit of the artificial kidney may be spent within a single day.

Dialysis is no longer necessary when the patient's own kidneys take over. This too is difficult to judge. It is not unusual to see a patient clinically deteriorate while putting out 2 liters of "urine" a day. Urine concentration is not a valid gauge; it will remain low for three or more weeks after the diuresis starts. Should it take five days for the patient to start to "open up" (i.e. pass 500 cc. or more urine), then he will start to "break even" a day or so later. If he "opens up" slower, the delay is longer. If it takes twenty days to cross the 500 cc. mark, then it will be three to four more days before he stops deteriorating. Death during these days is not unusual. Lastly, a peculiar situa-

tion occurs. It is distressing and should give a clue to the mechanisms of the disease. Occasionally, a patient will start diuresing late, excrete 500 cc. on the twentieth day, 2000 on the twenty-third day, and 3000 cc. of "urine" on the twenty-fourth day. On this day he will have a return of some appetite, will look better to the nurses, and will volunteer that he feels much better. His NPN, serum potassium, and such will be considerably lowered by his diuresis. Then he suddenly drops dead. In the author's experience, two subtle, ominous signs were still present. The patient was still jittery; his interest span was short; he was restless, and did not sleep the previous night. His mitral first sound had remained muffled. One more run on the artificial kidney would, in all probability, have been the difference.

Statistics of survival of patients who require the artificial kidney are not valid. They depend primarily upon the illness which caused the renal failure, the con-

current illness, and the selection of cases to run.

The following cases will serve to illustrate the use of the artificial kidney in "lower nephron nephrosis". The first case in Louisiana, in 1954, is a simple example (Figure 3).*

The patient, a 34 year old white female, in previous good health entered a local hospital in shock associated with bleeding of an abortion. In the emergency she was given several liters of intravenous glucose in water, a pint of mismatched blood, and a D and C was done. The next day she was noted to be severely oliguric. During the next thirteen days she was treated conservatively. On the fourth day she was given hypertonic salt, raising her serum sodium, and there was an associated slight rise in urine output. Her weight remained at 144 pounds, although she started to have edema. Serum potassium did not rise above 5.5 meq/li. at any time; BUN and creatinine rose steadily. She became progressively ill, began vomiting on the sixth day, had petechiae on the twelfth day, and became dyspneic on the

* The author is indebted to Dr. Adolph Jacobs, Chief of the Independent Ob-Gyn. Service at Charity Hospital, for the presentation of this case.

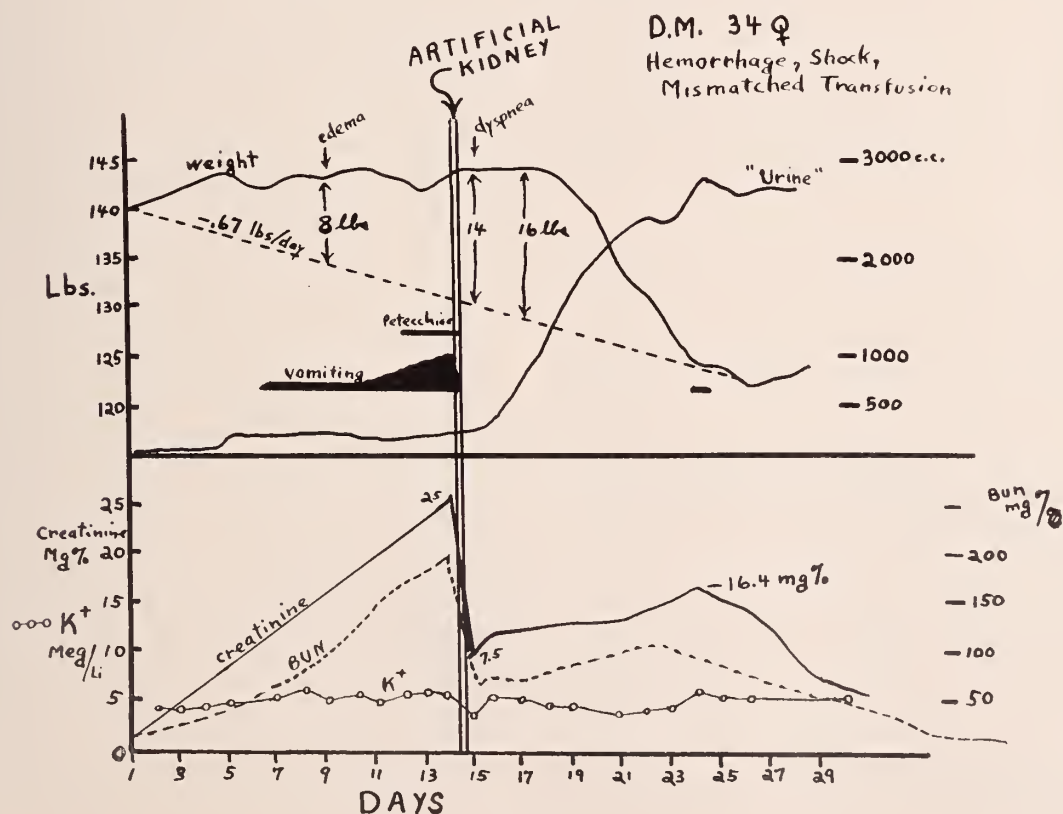


Figure 3

thirteenth day. At that time she was still putting out 150 cc/day of "urine". The artificial kidney was used for eight hours on the fourteenth day. She appeared strikingly better; nausea and vomiting disappeared; she regained her appetite. Her heart sounds improved to normal, but she still had some evidence of congestive failure. Conservative therapy was resumed. She could eat again; no more petechiae were noted. Packed red blood cells were given for her anemia. A few days after the dialysis she started to diurese. The rise in urine output was less rapid than one notes in cases that diurese at an earlier date.

During dialysis her serum creatinine fell from 25 to 7.5, but in spite of putting out 500 cc. of "urine" on her seventeenth day, it continued to rise to a peak of 16.5 mg% on the twenty-fifth day, before it fell from her own kidney function. This demonstrated the persistence of frank kidney failure in spite of the excretion of 2000 cc. of "urine" daily. She did not become clinically ill after dialysis except for some vomiting on the twenty-fourth day. This is probably due to the fact that she had little necrotic tissue, and it took thirteen days of renal failure to reach extremis the first time. Her weight dropped dramatically during the diuresis as she lost her edema. The loss of weight was probably a steady .67 pounds a day as shown by the broken line in the graph; the difference between this broken line and her actual weight is probably water retained. At 8 pounds she manifested edema and at 14 pounds was in clinical heart failure.

This patient has gone on to uneventful clinical recovery. She rapidly regained her weight. One year later she was clinically well and had no symptoms referable to the kidney. Her creatinine clearance was 60 per cent of normal.

This case is an example of acute renal failure without tissue necrosis, who deteriorated slowly. One run on the artificial kidney on the fourteenth day was sufficient to tide her over three weeks of kidney failure. Others are not so simple.

For example, a 17 year old boy* was shot through the right thigh while playing with a new shotgun. He bled profusely, and was rushed to the nearest hospital. The bullet avulsed about 6 inches of the femoral artery and destroyed the profunda branch. It created a large ulcer on the medial aspect of the right thigh, with an exposed fracture of the femur. Though the sciatic nerve was anatomically intact, it was not functioning. Thirty pints of blood were given; an excellent

emergency nylon arterial graft was sewn in to bridge the gap in the femoral artery. This restored the pulses to a bloodless right leg. The leg was placed in balanced traction; the wound was debrided and dressed.

On the second day he was transferred to the Touro Infirmary for further care. The wound was further debrided, and the position of the graft was altered. He was noted to be severely oliguric. Conservative therapy of acute renal failure was started. Vomiting was present from the start. On the fifth day he appeared quite ill. The mitral first sound had become progressively less crisp, and on the sixth day it was readily confused with the louder 2nd sound at the apex. He received only 200 cc. of fluids intravenously during the sixth night and lost the same amount of fluid in gastrointestinal suction that same night. In spite of no gain in water, he was noted to be slightly dyspneic at 7 a.m. of the seventh day. By 9 a.m. he was in frank pulmonary edema, with severe cyanosis, loss of consciousness, and a pulse rate of 150 per minute. An EKG taken at about 8 a.m. showed sinus tachycardia and slight peaking of the T waves in the precordial leads. He responded dramatically to a 500 cc. phlebotomy, and was digitalized. The intravenous was stopped, and gastrointestinal suction was continued. During the day he was awake and alert; he was not bothered by congestive heart failure. At about 7 p.m. he was noted to have an irregularity of his pulse, and he rapidly became stuporous. His blood pressure fell to shock levels, and his pulse fell to about 50 per minute. He was cyanotic and lost consciousness. An EKG showed severe hyperkalemic effects: rate 40 per minute, QRS widened to .28 per second, and multiple ventricular premature beats. (His serum potassium was 8.1 meq/li. that morning and 8.0 that evening at 7 p.m.) An intravenous infusion of calcium gluconate was immediately started with restoration of his blood pressure and EKG almost to normal. He returned from coma to stuporous state.

He was put on the artificial kidney and dialyzed for six hours. Within the first fifteen minutes the heart sounds had improved remarkably, and after thirty minutes, he was weaned off the calcium infusion. He became alert and rational. By the end of the procedure, his appetite had returned for the first time since he was shot. His NPN fell from 212 to 131. For the next few days it was possible to feed him by mouth, and a conservative regime was resumed. He continued to excrete 40 cc. of muddy "urine" a day. Five days after the first dialysis he was again dialyzed because of a recurrence of vomiting and poor heart sounds. He had the same clinical recovery; conservative therapy was resumed. Three days later, the fifteenth day, his "urine" output rose to 150 cc. per day. On the eighteenth day,

* The author is indebted to Drs. Robert Schramel and Edward Haslam of the Tulane Surgery Department for the presentation of this case.

although he had passed 450 cc. of "urine" in twenty-four hours, he was dialyzed a third time for the same findings. For a third time his appetite returned, and conservative therapy was resumed. Fresh petechiae were noted on the twentieth and twenty-first days. On the twenty-second day vomiting recurred. A friction rub was heard from the eighteenth through the twenty-sixth day. On about the twenty-fourth day (the sixth of his diuresis) he no longer went downhill, but slowly showed clinical improvement. On the twenty-fifth day intravenous potassium chloride was necessary for hypokalemia.

Massive doses of antibiotics, including 20,000,000 units of sodium penicillin by vein per day, were given. Wound healing was delayed. About one month after the injury, healthy granulation tissue started to grow, and bone callus was noted in x-ray for the first time. He had 2 massive hemorrhages from the wound since diuresis. This required anesthesia and surgical intervention, but he withstood the procedures well. Recovery is slow.

This is an example of severe acute renal failure, complicated by a massive wound. Each harmed the other. Uremia progressed rapidly to virtual exodus in seven days. Three runs on the artificial kidney were necessary to keep him alive for three weeks until his renal function returned. The recurrence of severe symptoms, such as petechiae, a friction rub, and vomiting, along with the neurological and cardiac findings of uremia several days after the third dialysis, proved the necessity of the third dialysis, in spite of the output of a fair amount of "urine", or apparent return of renal function. Wound healing was considerably delayed; the infected wound did poorly, but did not break down. The nylon artery graft remained intact and subsequent plastic surgery was necessary. Hyperkalemia did not threaten after the seventh day. Even when his EKG showed terminal changes of hyperkalemia on the seventh night, his serum potassium was actually the same or even lower than it had been that morning. It is evident that the electrocardiogram depends on other factors in addition to the serum potassium.

DRUG POISONING

The artificial kidney is very effective in removing most drugs from the body. Any drug of low molecular weight will

diffuse through the cellophane, even if it is largely bound to proteins of the blood. To date, the method has been used clinically to remove several drugs in situations where it was desirable to remove them.

Barbiturate intoxication, when severe and out of reach of conventional therapy, can be treated this way.¹⁰ In those cases of overdose in which the epinephrin-like drugs (ephedrin, neosynephrin, levophed, etc.) are given in doses large enough to cause side effects, such as cardiac arrhythmias; the metrazol, picrotoxin, or the like are given to the extent of focal convulsions; though respirations can be supported by a respirator or electrical stimulation, the blood pressure cannot, and the urine output has fallen, the artificial kidney is still quite effective in removing the causative drug. Six or eight hours on the artificial kidney will allow removal of sufficient barbiturate to bring the patient from coma to a groggy awake state. Since it will eliminate three to four days of critical coma, and the risk of pneumonia, it should be considered in the less severe poisonings.

Bromides¹¹ are very rapidly removed by the artificial kidney. The clinical illness of bromide intoxication can be shortened from several weeks to a day or two by this method.

Doriden poisoning has also been quite successfully treated this way.

Salicylate¹² poisoning produces the therapeutic dilemma of metabolic acidosis and respiratory alkalosis. Should the intoxication be of any seriousness, the simple solution is to remove the salicylates via the artificial kidney.

Thiocynates, rarely used today, can cause a peculiar clinical picture, which has been very effectively treated by dialysis.

As the occasions present, many other drug intoxications will be treated by this new method.

CHRONIC RENAL FAILURE

Since the evolution of chronic renal failure is slower than the acute renal failure, it will be some time before very much is

known about the use of the artificial kidney in this disease. To date, it seems that a person who gradually has sunk into the syndrome of uremia from chronic pyelonephritis, polycystic kidneys, and perhaps chronic glomerulonephritis will get between three weeks' and six months' relief from his symptoms by a run on the artificial kidney.¹³ Repeated dialyses are less effective. The result seems to be not too predictable, and it has been found that those with malignant hypertension do poorly. It is interesting that the patient may not improve for forty-eight hours after dialysis.

Should a person who is moderately uremic, but compensated, become acutely ill with an infection or as a result of necessary surgery, he may be benefited or returned to his previous state by the artificial kidney. A run on the artificial kidney will reduce the risk of surgery for bilateral staghorn calculi in the already uremic patient.

DOUBTFUL INDICATIONS FOR THE USE OF THE ARTIFICIAL KIDNEY

There is a bit of evidence that dialysis may be useful in the treatment of intractable shock. Here it would be of great advantage to have a blood circuit from vein to vein instead of artery to vein.

Peritonitis per se is not treatable by the artificial kidney. Some doubt may be raised by a recent experience.

A 42 year old woman was found to have a ruptured appendix and peritonitis when explored for an acute abdomen. Five grams of sulfonamide was put into the peritoneal cavity at surgery. Postoperatively she was oliguric for almost two weeks. She had fever and a silent, tender abdomen. She was dialyzed on the fifth and ninth days. Though the fever persisted, she was clinically much improved and had a return of peristalsis following each dialysis. By the end of the second week she had a return of urine output and went on to full clinical recovery.

It is difficult to tell where one disease ends and another begins. It is well known that severe infections are associated with azotemia and some oliguria, not so prolonged as in this case of acute renal failure. It is interesting that dialysis resulted in the return of peristalsis in spite of per-

itonitis in the case mentioned. The question may be raised as to whether the infection itself could have been helped by dialysis in the absence of acute renal failure.

DANGERS OR CONTRAINDICATIONS

Bleeding is the major danger or contraindication to the use of the artificial kidney. The oozing and petechiae of uremia cease with dialysis, but the person with a peptic ulcer is prone to bleed when given heparin. Indeed, a person who spontaneously bleeds from the GI tract when heparinized probably has an ulcer. A wound over an hour old seldom bleeds.

A fresh myocardial infarction is often stated as a contraindication to dialysis. The author has never seen a myocardial infarction produce severe enough acute renal failure to necessitate dialysis. However, a myocardial infarction may occur in association with other illnesses, e.g., bowel infarction with necessary surgery, which may result in a severe renal failure. The author has successfully dialyzed such a patient using a circuit from artery to vein. Today it would be safer to use a circuit from vein to vein. Although a fresh myocardial infarction would increase the risk of dialysis, it should be done when indicated. Perhaps in the future a precedent will be set to dialyze these patients with a circuit from vein to artery. This would be the circuit of the artificial heart, since the "kidney" also aerates the blood. Thus the risk would be even less.

REFERENCES

1. Abel, J. J., Rowntree, L. G., and Turner, B. B.: On the removal of diffusible substances from the circulating blood of living animals by dialysis, *J. Pharm. and Exp. Therapeutics*, 5:275, 1913-14; 5:611, 1913-14.
2. Kolff, W. J., *New Ways of Treating Uremia*, London 1947, J. A. Churchill, Ltd.
3. Fine, J., Frank, H. A., and Seligman, A. M.: The treatment of acute renal failure by peritoneal irrigation, *Ann. of Surg.*, 124:857, 1946.
4. Alwell, N.: On artificial kidney, XI Some supplementary constructional details of dialyses intended for rabbit and homo, *Acta Med. Scandinavia*, (Supp 229) 133:20, 1949.
- 4a. Kolff, W. J., and Watschinger, B.: Further development of a coil kidney, *J. Lab. & Clin. Med.*, 47:969, 1956.
5. Oliver, J., MacDowell, M., and Tracy, A.: The pathogenesis of acute renal failure associated with traumatic and toxic injury, *J. Clin. Invest.* 35:1307, 1951.
6. Straus, M. B.: Therapeutic considerations in acute renal failure, *Bull. New England Med. Center*, 11:247, 1949.
7. Hopper, James Jr., O'Connell, B. P., Fluss, H. R.: Serum potassium patterns in anuria and oliguria, *Ann. Int. Med.*, 38:935, 1953.

8. Knowles, H. C., and Kaplan, S.: Treatment of hyperkalemia in acute renal failure using exchange resins, *AMA Archives Int. Med.*, 92:189, 1953.

8a. Elkington, J. R., and others: Treatment of potassium retention in anuria with cation exchange resin: Preliminary Report, *Am. J. Med. Sc.*, 220:547, 1950.

9. Lucke, B.: Lower nephron nephrosis, *Military Surgeon*, 99:371, 1946.

10. Kyle, L. H. and others: The application of hemodialysis to the treatment of barbiturate poisoning, *J. Clin. Invest.* 32:364, 1953.

11. Merrill, J. P.: Treatment of bromism with the artificial kidney, *Ann. Int. Med.*, 37:186, 1952.

12. Doolan, P. D., Walsh, W. P., Kyle, L. H., Wishinsky, H.: Acetylsalicylic acid intoxication, *J.A.M.A.*, 146:105, 1951.

13. Goldner, F., Gordon, G. L., Danzig, L. E.: Use of artificial kidney in chronic renal disease, *Arch. Int. Med.*, 93:61, 1954.

13a. Merrill, J. P.: *The Treatment of Renal Failure*, Grune and Stratton, New York, 1955.

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THE SYSTEMIC USE OF ACTH AND SYNTHETIC ADRENAL GLUCOCORTICOIDS AND MINERALOCORTICOIDS

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BATON ROUGE

HISTORICAL NOTE

The preparation of adrenal cortical biological extract by Swingle and Pfiffner,¹ in 1930, lit the dawn for physiological treatment of altered function of the adrenal cortex and ultimately led to ascendency of steroids in the management of mesenchymal disease. Highlights of the brilliance that followed are listed below.

1934: Isolation of cortical hormones.²

1937: Identification of desoxycorticosterone.³

1943: Purification of ACTH.⁴⁻⁵

1946: Synthesis of Compound E.⁶

1949: Treatment of arthritis.⁷

1953: Identification of aldosterone.⁸

1954: Preparation of halogenated steroids.⁹

Development of delta compounds.¹⁰

ANTERIOR PITUITARY-ADRENAL CORTICAL PHYSIOLOGY †

When ACTH is injected repetitively into humans with responsive adrenal cortices, or when high levels of synthetic 11, 17-oxysteroids are administered, profound

metabolic events occur. These changes, beneficial and undesirable, are proportional to dosage and duration and mediated by tissue consequences of glucocorticoids, androgens and mineralocorticoids. Following ACTH stimulation of the cortex, all of these hormones, except aldosterone, in increased amounts are endogenously produced, but after peroral or parenteral glucocorticoids, intrinsic yield ceases or is diminished markedly.

Glucocorticoids naturally proliferated in the adrenal cortex are chiefly hydrocortisone, with small amounts of cortisone and corticosterone. They are estimable in urine or plasma and designated 17-hydroxycorticoids (17-OHC). Normal adult values for 17-OHC are: males 6-14 mg./24 hours and females 4-10 mg./24 hours when measured as Porter-Silber chromagens. Normal adult values for plasma 17-OHC by modification of the method of Nelson and Samuels are 7-18 micrograms per cent.

Mineralocorticoids naturally occurring in the adrenal cortex are desoxycorticosterone and aldosterone. The latter singularly is not regulated by ACTH. Clinically useful methods for assay of these substances have not been perfected. Their influence is primarily on electrolytes.

Androgens also are produced naturally by the adrenal cortex and measurable in urine as 17-ketosteroids (17-KS). They are metabolically weak, consisting chiefly of dehydroisoandrosterone, and approximately 1-2 mg. of that excreted in female urine come from the ovaries, while in males, about 5 mg. originate from the testes. Normal adult values for urinary 17-KS per 24 hours are: females 5-15 mg. and for males 10-20 mg. Their chief properties promote virilism and protein anabolism. Further consideration will not be given here.

Glucocorticoid Effect: Release of ACTH by the anterior pituitary is inhibited, and the adrenal cortex assumes a quiescent state, with little or no production of hormones.

Gluconeogenesis and liver glycogenesis rates are elevated, leaving a wake of stri-

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† See references 11-30 for detail concerning physiology, indications and rationale of therapy.

ae, hyperbruability, osteoporosis, pathological fracture, metastatic calcification, and poor healing. Carbohydrate tolerance decreases and, if severe, diabetes mellitus may supervene.

Fat production, mobilization and redistribution rise; the physiognomy reveals moonface, centripetal obesity and thin limbs.

In connective tissue disease, antiphlogistic dominance halts dissolution of structural mucopolysaccharide substrates of ground substance and collagen, with resultant decreased mobility of plasma and blood cells into tissue. This leads to decreased rubor and dolor and to increased vulnerability to microorganisms.

Mineralocorticoid Effect: Hydrochloric acid production in the stomach mounts in 50 per cent of patients and is manifested by dyspepsia and occasionally by ulcer. Electrolyte shifts move potassium from cells and increase intracellular sodium. Renal excretion of sodium slows as kaluresis accelerates. The net result is hypernatremia, hypertension, edema and hypokassemic weakness.

Central Effect: Symptoms ranging from euphoria to psychosis accompany hypercortical states.

SYSTEMICALLY USEFUL MODALITIES

A. ACTH Gel.

B. Synthetic Adrenal Cortical Steroids.‡

1. Oral:

- a. Cortisone acetate (Compound E).
- b. Hydrocortisone (Compound F).
- c. Prednisone (δ^1 E). Former generic name: *metacortandracin*.
- d. Prednisolone (δ^1 F). Former generic name *metacortandralone*.
- e. Fluorohydrocortisone (FF).

2. Sublingual: Desoxycorticosterone acetate linguets.

3. Intramuscular:

- a. Hydrocortisone sodium hemisuccinate (F-HS).

- b. Desoxycorticosterone acetate (DC-A).

- c. Desoxycorticosterone trimethyl acetate (DC-TMA).

4. Intravenous: Hydrocortisone sodium hemisuccinate.

RATIONALE OF THERAPY

ACTH: The usefulness of ACTH demands sound adrenals, for if the target organ is enfeebled or destroyed by local disease, trophic hormone is dissipated. Adrenals can be stimulated by prolonged intravenous administration of lyophilized ACTH, or by daily intramuscular injections of repository ACTH. At basal conditions the adrenals elaborate into the bloodstream an effluent of hormones (17-OHC) equivalent to 30-40 mg. of hydrocortisone daily. When stimulated maximally, production rises to 240 mg. per day.³¹ If a disease requires more than this amount of Compound F for remission, it cannot be produced endogenously, and ACTH will not control effectively.

ACTH is a polypeptide, and the risk of antigen-antibody reaction is ubiquitous but small. Other frailties are: (1) it must be given parenterally, and (2) the limitation of response by the adrenal when supreme cortical effect is desired.

Synthetic Adrenal Cortical Hormones: These compounds, with the exception of desoxycorticosterone, rapidly and almost completely are absorbed from the gut. Dosage is easily calibrated. When quantities under 50 mg. daily of cortisone or hydrocortisone are employed, fluid retention is no problem, and these less expensive drugs are choice. Above that level undesirable inorganic sequelae are usually present, and the analogues prednisone and prednisolone should be used, for therapeutic effectiveness is attained at lower dosage ($\frac{1}{3}$ or $\frac{1}{4}$), although milligram for milligram they promote fluid retention in equal amounts as do the older steroids. Cardiorenal disease complications specifically demand δ compounds, and patients are especially thankful for salt liberalization, which can be permitted oftener with the unsaturated drugs. Unfortunately

‡ The following are investigative and not therapeutically significant at present: fluoroprednisolone, aldosterone, 2-methyl-hydrocortisone, 2-methyl-fluorohydrocortisone, and 14-hydroxyhydrocortisone.

TABLE 1
SCHEME OF THERAPY

Adrenal State	Example	Desired Adrenal State	Hormones of Choice	Dose (Mg./Day)	Adjunct
Hypofunction	Panhypopituitarism	Basal	E or F or ACTH*	30.0	Thyroid Estrogen (♀) Testosterone (♂)
	Addison's Disease & Post-Adrenal- ectomy Syndrome	Basal	E or F + FF or DC-TMA**	30.0 0.5 2.0	NaCl
	Acute Adrenal Cortical Insufficiency	Mod. to Severe Hypercorticism	F-HS + DC-TMA**	300.0 2.0	NaCl
Androgenic Hyperfunction (Elevated 17-KS)	Adrenogenital Syndrome	Basal (Suppression 17-KS)	E or F	30.0	—
Normal	Rheumatoid Arthritis	Mild Hypercorticism	Δ^1 E or Δ^1 F or ACTH*	20-30.0	KCl
	Lymphocytic Leukemia	Moderate Hypercorticism	Δ^1 E or Δ^1 F or ACTH*	30-40.0	H. Prot. Diet KCl Testosterone***
	Nephrotic Syndrome	Severe Hypercorticism	Δ^1 E or Δ^1 F	80-120.0	Same
	Pemphigus Foliaceus	Super- hypercorticism	Δ^1 E or Δ^1 F	120-250.0	Same

* Daily injections of gel with clinical response as guide to dosage.

** Given as 50 mg. I.M. every 2-4 weeks.

*** With delta compounds, but not with ACTH.

they are reported to cause a higher incidence of vasomotor and peptic symptoms and purpura.³²

Fluorohydrocortisone acetate, because of intense sodium retention, provides adequate inorganic and vasopressor need when given in daily oral doses of 0.5 mg. in lieu of monthly, intramuscular injections of desoxycorticosterone trimethyl acetate for Addison's disease and post-adrenalectomy syndrome.

Hydrocortisone sodium hemisuccinate is assimilated so rapidly into tissue humor after intravenous or intramuscular administration that its use for perilous adrenal cortical insufficiency crises is astonishingly gratifying.

Estimation of Dosage: From above data, it may be assumed that basal requirement of cortisone or hydrocortisone is about 30 mg. daily and prednisone or prednisolone 7.5-10 mg. daily. Stressful events and disease commonly double and triple

this demand. Less often four to ten, and rarely, even thirty-fold amounts are required. Basal dosage is indicated primarily for hormonal replacement, regardless of the cause.

Increments of ACTH to evoke the desired cortical synthesis of steroids is difficult to judge without measurement of urinary or plasma 17-hydroxycorticoids. Therefore, unitage and injection interval must be computed from clinical parameters of hormonal replacement response or inflammatory composure.

The induction of adrenal hypercorticism is necessary to combat the ravages of most mesenchymal diseases. It is convenient to categorize the desired adrenal state as follows for purpose of adjusting dosage to equilibrium with the degree of disease:

1. Basal
2. Mild hypercorticism
3. Moderate hypercorticism
4. Severe hypercorticism

5. Superhypercorticism

All dosages if prolonged cause inactivity of the adrenals, which require a few days to reactivate after discontinuance. Levels above basal, if given for months or years, may cause severe Cushing's syndrome medicamentosa, with devastating morbidity.

CLINICAL ENTITIES RESPONSIVE TO ACTH
AND/OR ADRENAL STEROIDS

(*Responsiveness herein does not in every case mean preference*).

I. *Hormonal malfunction:*

Acute adrenal cortical insufficiency

(Waterhouse-Friderichsen's syndrome, traumatic and surgical shock, and relative cortical insufficiency after prolonged suppression of adrenal reserve with corticoid therapy).

Addison's disease

Adenoma, pancreatic islet cell

Adrenogenital syndrome

Panhypopituitarism

Post-adrenalectomy syndrome

Thyroid storm

II. *Mesenchymal disease:*

A. Hematological disease:

Anemia, aplastic

Anemia, hemolytic

Leukemia (acute, lymphocytic, granulocytic, and monocytic).

Pseudohemophilic thrombasthenia

Reticuloendotheliosis

Thrombocytopenia

Transfusion reactions

B. Diffuse collagen disease:

Arthritis, psoriatic

Arthritis, rheumatoid

Arthritis, degenerative

Asthma, (seasonal, perennial, bronchial)

Bursitis

Edema, angioneurotic

Emphysema, pulmonary

Erythema multiforme

Fibrosis, pulmonary (Hamman-Rich syndrome)

Fibrositis

Myocarditis, allergic

Osteitis, pubis

Pemphigus foliaceus

Polyarteritis nodosa

Regional ileitis

Rheumatic carditis, acute

Rheumatic fever, acute

Sarcoidosis

Scleredema

Scleroderma (dermatomyositis)

Serum sickness

Systemic lupus erythematosus

Spondylitis, rheumatoid

Torticollis, chronic

Ulcerative colitis

Whipple's disease

C. Dermatologic disease:

Dermatitis, atopic

Dermatitis, contact

Dermatitis, exfoliative

Dermatitis, herpetiformis

Dermatitis, medicamentosa

Dermatitis, venenata

Eczema, atopic

Pemphigus, vulgaris

Psoriasis

III. *Miscellaneous*

Carcinoma, prostatic

Gout

Glycogenosis (von Gierke's disease)

Infections, overwhelming

Lymphosarcoma

Nephrotic syndrome

Peyronie's disease

Snake venom poisoning

Sprue

Weber-Christian disease

STEROID WITHDRAWAL SYNDROME

When patients have been treated with adrenal glucocorticoids equivalent to or more than 60 mg. hydrocortisone daily for prolonged periods, usually two months or more, and withdrawal is abrupt, an alarming syndrome may develop within twenty-four to forty-eight hours. It is characterized by weakness, nausea, vomiting, abdominal pain and generalized muscular cramps. The mechanism is due to pituitary suppression of endogenous ACTH, and although ominously masquerading as acute adrenal cortical insufficiency, the syndrome is nonfatal, because the adrenals, if present, continue to produce the powerful sodium retainer, aldosterone.

Symptoms usually subside in two to five days. This syndrome can be prevented or minimized by gradual discontinuance of steroid therapy.

Equally as important, a recrudescence of disease may, and usually does, occur, sometimes to fulminating degree. This is highly influenced by the general condition of the patient.

In order to decrease this unpleasantness, all patients on prolonged use of steroids should carry purse cards indicating diagnosis and treatment so that those who ministrates to them following trauma may not err by failing to administer additional life-saving hormone. Following prolonged steroid therapy, it is probably wise to cover stressful events during the next six months with parenteral hydrocortisone sodium hemisuccinate.

SUMMARY

A physiological rationale for use of ACTH and synthetic glucocorticoids and mineralocorticoids has been presented.

REFERENCES

- Swingle, W. W. and Pfiffner, J. J.: Studies on adrenal cortex; aqueous extract of adrenal cortex which maintains life of bilaterally adrenalectomized cats, *Am. J. Physiol.*, 96:164, 1931.
- Kendall, E. C., and others: Isolation in crystalline form of the hormone essential to life from the suprarenal cortex; its chemical nature and physiologic properties, *Tr. Assn. Am. Phys.*, 49:147, 1934.
- Steiger, M. and Reichstein, T.: Chemical structure of corticosterone, *Nature*, 141:202, 1938.
- Li, C. H., Evans, H. M. and Simpson, M. E.: Adrenocorticotrophic hormone, *J. Biol. Chem.*, 149:413, 1943.
- Sayers, G., White, A. and Long, C. N. H.: Preparation of pituitary adrenotropic hormone, *Proc. Soc. Exp. Biol. & Med.*, 52:199, 1943.
- Kendall, E. C.: Some observations on the hormone of the adrenal cortex designated Compound E, *Proc. Staff Meet. Mayo Clin.*, 24:298, 1949.
- Hench, P. S., Kendall, E. C., Slocumb, C. H. and Polley, H. F.: The effect of a hormone of the adrenal cortex (17-hydroxy-11-dehydrocorticosterone: compound E) and of pituitary adrenocorticotrophic hormone on rheumatoid arthritis, *Proc. Staff Meet. Mayo Clin.*, 24:181, 1949.
- Simpson, S. A., and others: Isolierung eines neuen kristallisierten hormons aus nebennieren mit besonders hoher wirksamkeit und dan mineralstoffwechsel, *Experientia*, 9:333, 1953.
- Borman, A. and Singer, F. M.: Adrenocortical activity of 9-halo derivatives of cortisone and hydrocortisone, *Fed. Proc.*, 13:185, 1954.
- Herzog, H. L., and others: New antiarthritic drugs, *Science*, 121:176, 1955.
- Samuels, L. T.: Metabolism of the steroid hormones, *In Progress in the Chemistry of Fats and other Lipids*, Pergamon Press, London, pp. 395, 1955.
- Gardner, L. I.: (Ed.), *Adrenal Function in Infants and Children*, Grune and Stratton, New York, 1956.
- Gaunt, R., Birnie, J. H. and Eversole, W. J.: Adrenal cortex and water metabolism, *Physiol. Rev.* 29:281, 1949.
- Thorn, G. W., and others: Pharmacologic aspects of adrenocortical steroids and ACTH in man, *New England J. Med.* 248:232, et seq. 1953.
- Polley, H. F.: Present therapeutic status of cortisone and its derivatives, with special reference to rheumatic diseases, *Brit. M. J.* 2:1253, 1956.
- Hench, P. S.: The discriminate use of cortisones and corticotrophins in general medicine with special reference to the collagen diseases. *In Third International Congress of Medicine*, pp. 274.
- Gold, J. J.: Blood Corticoids: Their measurement and significance—a review, *J. Clin. Endocrinol. & Metab.* 17:296, 1957.
- Gaunt, R., Renzi, A. A. and Chart, J. J.: Aldosterone—a review, *J. Clin. Endocrinol. & Metab.* 15:621, 1955.
- Renzi, A. A., Renzi, M., Chart, J. J. and Gaunt, R.: The effects of aldosterone and other steroids on water intoxication and renal function, *Acta. Endocrin.* 21:47, 1956.
- Rocha e Silva, M.: Histamine: Its Role in Anaphylaxis and Allergy, C. C. Thomas, Springfield, 1956.
- Gustavson, K. H.: The Chemistry and Reactivity of Collagen, Academic Press, New York, 1956.
- Connective Tissue in Health and Disease (Ed: Absoe-Hansen). E. Munksgaard, Copenhagen, 1954.
- Laurell, Helge: A paper electrophoretic study of the effect of ACTH and cortisone on the protein-bound serum polysaccharides in some patients with rheumatoid arthritis, ulcerative colitis, etc. *In Paper Electrophoresis*, Churchill, Ltd., London, pp 58, 1956.
- Woodbury, D. M., Timiras, P. S. and Vernadakis, A.: Influence of adrenocortical steroids on brain function and metabolism, *In Hormones, Brain Function and Behavior* (Ed: Hoagland, H.). Academic Press, New York, pp 27, 1957.
- Calkins, E., Soodak, M. and Bauer, W.: Metabolism and clinical significance of the carbohydrate components of connective tissue, *New England J. Med.* 253:865, 1955.
- Howell, D. S. and Ragen, C.: The course of rheumatoid arthritis during four years of induced hyperadrenalism (IHA), *Med.* 35:83, 1956.
- Frick, P. G.: Acquired circulating anticoagulants in systemic "collagen disease," *Blood*. 10:691, 1955.
- Spink, W. W.: Adrenocorticotrophic hormone and adrenal steroids in the management of infectious diseases, *Ann. Int. Med.* 43:685, 1955.
- Germuth, F. C.: The role of adrenocortical steroids in infection, immunity and hypersensitivity, *Pharmacol. Rev.* 8:1, 1956.
- Robinson, H. J.: Adrenal cortical hormones and infection, *Ped.* 17:770, 1956.
- di Raimondo, V. C., and Forsham, P. H.: Personal communication, 1956.
- Boland, E. W.: Prednisone and prednisolone therapy in rheumatoid arthritis, *J.A.M.A.* 160:613, 1956.

CURING CARCINOMA OF THE PROSTATE *

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NEW ORLEANS

That carcinoma of the prostate gland is a major cause of morbidity and mortality is readily apparent. In the Atlanta

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study, published by the Public Health Service, carcinoma of the prostate ranked first in incidence and prevalence, and third as a cause of death among the major cancers in males. In routine autopsies the incidence has been reported to be as high as 18 per cent.

HORMONAL CONTROL

In the past decade much of the urologic literature has been devoted to the hormonal control of these cancers. There is no doubt about the value of estrogen therapy and castration. Total bilateral adrenalectomy and hypophysectomy have been tried. However, on the basis of our present knowledge and experience, we must state that the endocrine attack on carcinoma of the prostate is strictly palliative and not curative. Even if there are no metastases when estrogens and castration are instituted, over 50 per cent of such patients will be dead within five years.

RADIATION THERAPY

Down through the years radiation therapy in various forms has been tried and discarded. In recent years radioactive gold has been injected into prostatic carcinomas which had extended too far locally to be excised but which had not metastasized distantly. Although some reports on this technique have been encouraging, in our experience it has not cured anyone and has proved quite injurious in a few patients. Experience with supervoltage x-ray in these tumors is too recent to be evaluated, although it is hoped that it is of more value than the other techniques.

At this time we must conclude that the only way of really hoping to cure carcinoma of the prostate is to find the lesion while it is still confined to the prostate and to extirpate it surgically.

DIAGNOSIS

Early detection is possible because about 80 per cent of these cancers begin in the posterior or posterolateral aspects of gland, and therefore, are accessible to palpation on digital rectal examination. Typically these lesions feel considerably harder than normal or hyperplastic prostatic tissue. Approximately 50 per cent

of hard nodules of the prostate prove to be carcinomatous on biopsy.

Occasionally, an early occult malignancy is found in tissue removed for relief of bladder neck obstruction due to benign hyperplasia or bladder neck contracture.

In order to feel that a carcinoma of the prostate is potentially curable, there should be no evidence of extraprostatic extension, such as fixation of the gland to surrounding structures, and no elevation of the prostatic fraction of the serum acid phosphatase. There should of course, be no demonstrable distant metastases.

Because so many prostatic nodules prove malignant we feel that if a patient has one, and his general condition and life expectancy warrant attempting to cure a possible malignancy, a biopsy should be done if it is not obvious that the hardness is due to something else, such as prostatic calculi, as seen on x-ray, or to tuberculous prostatitis. Although cytologic studies of prostatic secretions, needle biopsies, and transrectal biopsies have been advocated we feel that the best way of obtaining proper biopsy material is by the open perineal route. There is no reason why a hard lump in the prostate should be treated with less respect than a hard nodule in the breast.

SURGERY

The curative surgery in these cases consists of removal of the entire prostate gland, the rim of bladder neck overlying the prostate, the seminal vesicles, the ampullae of the vasa, and most of the anterior layer of Denonvillier's fascia. An anastomosis is then done between the bladder neck and the membranous urethra. This procedure may be done either through the retropubic or perineal approach. We prefer the perineal as the simpler and more direct approach.

Such surgery is usually spoken of as "radical prostatectomy". Actually, when one thinks of cancer surgery in general, there is nothing radical about it. Even older men tolerate these procedures well as a rule. The operative mortality is low. In the large series reported by Turner and

Belt, it was only 3.9 per cent. In cases we have done at Charity Hospital in New Orleans, there have been no operative deaths. The continuity of the urinary tract is preserved and, although urinary incontinence and fistulae do occur, they are uncommon.

SURVIVAL RATE

Using this total prostatovesiculectomy, the ten year survival rate, in those cases of prostatic carcinoma which are thought to be potentially curable, should be about 50 per cent. It is unfortunate that over the country only about 5 per cent of all carcinomas of the prostate are found early enough to attempt cure. At Charity Hospital in New Orleans, perhaps because of the lack of routine careful physical examination of indigent people, this figure is closer to 1 per cent.

At this time, and using all the tools with which we have to work, our chief hope of raising the dismal overall cure rate in carcinoma of the prostate, is in the more frequent detection of these cancers when they are still early. This must be done by routine, periodic, careful and suspecting palpation of the gland in all men over 40.

REFERENCES

1. Jewett, H. J.: Radical perineal prostatectomy for carcinoma, an analysis of cases at Johns Hopkins Hospital, 1904-1954, *J.A.M.A.* 156:1039, 1954.
2. Jewett, H. J.: Significance of the palpable prostatic nodule, *J.A.M.A.*, 160:838, 1956.
3. Nesbit, R. M. and Baum, W. C.: Endocrine control of prostatic carcinoma; Clinical and statistical survey of 1818 cases, *J.A.M.A.*, 143:1317, 1950.
4. Turner, R. D. and Belt, E.: A study of 229 consecutive cases of total perineal prostatectomy for cancer of the prostate, *J. Urol.* 77:62, 1957.

DISCUSSION

Dr. B. E. Trichel (Shreveport): Carcinoma of the prostate, as Dr. Pratt has pointed out, is a common malignancy present clinically in men primarily in the age group 50 years or older. The lesion, by virtue of its origin in 80 per cent of the cases in the posterior lobe of the prostate, localizes itself immediately adjacent to the anterior rectal wall and is easily detectable by digital rectal examination. However, because the lesion is asymptomatic at this stage of its development, only 5 per cent of the cases are diagnosed early enough for radical surgery to be carried out. This fact is regrettable and points out possibly the need for further education of the male public of the advantages to be gained by routine digital rectal

examination after age 50, carried out by an experienced examiner.

At the Confederate Memorial Medical Center in Shreveport, we employ the two-stage operation for management of operable carcinoma of the prostate. This technique consists of open exposure of the suspected lesion, using the perineal route. The lesion is identified and liberal biopsy is taken for permanent section. At the same time the posterior surface and lateral margins of the prostate and seminal vesicles are freed from the surrounding tissues. The wound is closed and the patient returned to the ward. Usually in three days a report is rendered by the pathologist. If the diagnosis is carcinoma, then the patient is taken back to the operating room and a radical procedure is carried out, using the retropubic approach.

This mode of management for early carcinoma of the prostate affords the following desirable advantages over other methods of treatment:

1. By open exposure of the prostate, it eliminates the errors of diagnosis inherent in the blind biopsy technique. By providing for a permanent section it further reduces the diagnostic error of frozen tissue technique.
2. It facilitates the technique of surgery by providing the most direct approach to the posterior and anterior surfaces of the gland thereby allowing for the operation to be carried out under direct vision.
3. By performing the operation in two stages, its indication can probably be further extended to include borderline poor risk cases that otherwise would not be candidates for radical surgery.

DUBIN-JOHNSON SYNDROME (CHRONIC IDIOPATHIC JAUNDICE)*

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GUY T. WILLIAMS, M.D.

DONOVAN C. BROWNE, M.D.

NEW ORLEANS

INTRODUCTION

An appraisal of low grade chronic jaundice should encompass a consideration of chronic idiopathic jaundice (Dubin-Johnson syndrome) since it presents features of parenchymal dysfunction and obstruction.

Dubin and Johnson first described this disturbance as chronic intermittent jaun-

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dice occurring principally in young people with vague upper gastrointestinal complaints. Liver profile exhibited features of parenchymal disturbance and obstruction. Cholecystography revealed a non-functioning organ. Histological examination of the liver revealed an unidentified pigment arranged radially about the central vein of the hepatic lobule.¹

REVIEW

Twenty-seven biopsy proven cases have been collected from the literature and are presented in Table 1.

TABLE 1
REVIEW OF REPORTED CASES

Date	Author	No. of Cases
1954	Dubin & Johnson ¹	12
1954	Spring & Nelson ²	4
1955	Klagman & Efrati ³	1
1955	Stein ⁴	1
1955	Clinicopathological Conference ⁵	
	Case Record—Mass. Gen. Hosp.	1
1956	Brown & Schnitka ⁶	1
1956	John & Knudtson ⁷	2
1956	Nelson ⁸	1
1957	McCurley & Muleisen ⁹	3
1957	Tamaki & Carfango ¹⁰	1
		—
		27

The frequency is unknown and difficult to establish since some cases were previously reported as infectious hepatitis.⁷ Dubin and Johnson reported 12 cases in a review of 4000 liver biopsies.

Jaundice was first detected at birth in one case. The earliest age at which the diagnosis was established was 16 years; whereas the oldest patient was 42 years of age.^{1, 9} There were 19 males and 8 females (1 was colored).⁵ However, if one excludes the largely military group of Dubin and Johnson, the ratio of males to females is about equal. A familial relationship was suggested in two cases and established in one.^{1, 3} The jaundice was intensified by pregnancy and 3 of the 8 females either had spontaneous abortions or delivered deformed fetuses^{3, 7, 9} (Table 2).

PATHOGENESIS

The nature of the metabolic disturbance concerns: (1) the formation of an iron free, yellowish brown, granular lipogenic, glycogenic, basophilic, fat insoluble, non-

TABLE 2

Age at which diagnosis established	16-42 years
Age at onset of jaundice	Birth—42 years
Sex—Male	19 cases
Female	8 (1 colored) cases
Family history	2 cases
Number with abnormal births	3 cases

bilirubin hemoglobin catabolic pigment, and (2) impaired hepatic parenchymal excretion of (a) the above pigment, (b) gall bladder dye (either oral or intravenous), (c) bromsulphathalein, and (d) bilirubin. The underlying cause remains unexplained.^{1, 2, 6, 7}

IDENTIFYING FEATURES

1. Absolute—The criterion "primum" is the histologic demonstration of a coarsely granular, yellowish brown, iron free non-bilirubin pigment, primarily in the hepatic polygonal cells, more heavily concentrated in a "spoke-like" fashion about the central vein of the hepatic lobule, diminishing in intensity toward the periphery. Less frequently, the pigment may be seen in the Kapffer cells^{1, 6} (Figures 1 and 2).

2. Presumptive—(1) Clinical: (a) Chronic intermittent jaundice in an otherwise healthy appearing young adult, frequently aggravated by upper respiratory infections, alcoholism, and pregnancy; (b) ill defined upper abdominal discomfort, nausea, anorexia, and rarely fever, (c) slightly enlarged or normal, either tender or

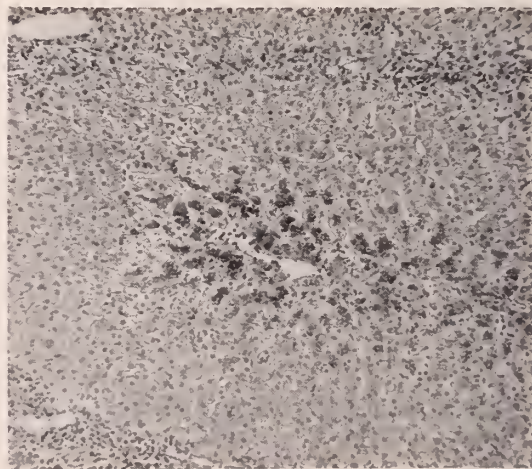


Figure 1.—Pigment in hepatic polygonal cells concentrated in spoke-like fashion about central vein of hepatic lobule.

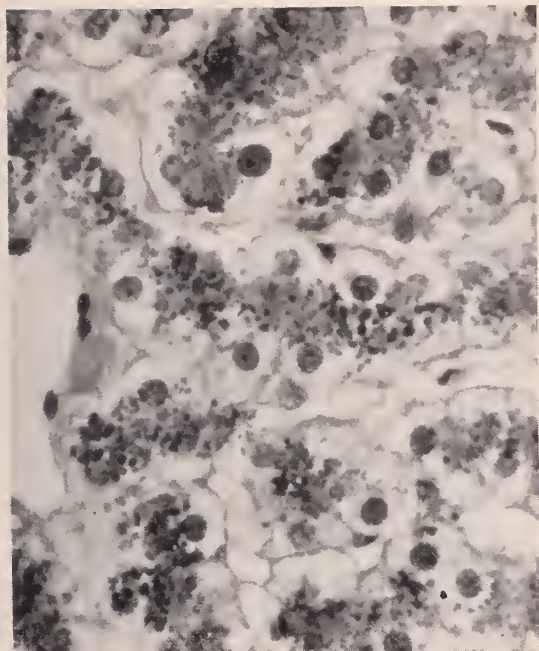


Figure 2.—Kapffer cells.

nontender liver; (d) absence of splenomegaly; (e) frequently dark urine.^{1, 6}

3. Laboratory—(a) Normal hemograms, including normal reticulocyte count, osmotic fragility, Coombs' test and normal red cell survival.^{1, 9} (b) high frequency of bilirubinuria; (c) elevation of mainly the direct portion of serum bilirubinuria; (d) mildly abnormal parenchymal function tests with BSP retention in the range of 10 per cent, normal total protein and albumin globulin ratio, occasional slight elevations of alkaline phosphatase, cholesterol, cephalin flocculation and thymol; (e) normal fecal urobilinogen and frequently elevated urinary urobilinogen; (f) normal prothrombin time, bleeding and clotting time.^{1, 9}

4. Radiographic — Original descriptions reported a nonfunctioning gall bladder. However, since then opacification has been described in 3 cases.^{1, 6, 9} Better visualization has been obtained by employing the intravenous technique. Associated gall stones have been reported in 2 instances confirmed in surgery.^{6, 7, 9}

Prognosis and longevity are excellent. McCurley and Muleisen reported 1 case (asymptomatic except for jaundice) recently accepted in the air corps.

THERAPY

Because of the benign nature of the disease, no treatment is indicated. Insufficient evidence is available and more cases and experience are necessary before therapeutic abortion can be considered.

DIFFERENTIAL DIAGNOSIS

1. Gilbert's disease (familial nonhemolytic jaundice of physiological hyperbilirubinemia.¹¹ This inborn type of benign hepatic dysfunction is usually seen in young people and may simulate Dubin-Johnson's syndrome. Gilbert's disease may be identified by: (a) familial history; (b) elevation of indirect bilirubin; (c) absence of bilirubinuria, absence of hepatomegaly and splenomegaly; (d) normal liver function; (e) normal cholecystogram; and (f) normal liver biopsy.

2. Hyperbilirubinemia resulting from residual viral hepatitis may be differentiated by: (a) history; (b) normal cholecystogram; (c) liver biopsy showing either normal liver or evidence of focal necroses, inflammatory reactions and/or portal fibrosis.

3. Hemolytic jaundice may be differentiated by: (a) association of jaundice and evident hemolysis, anemia and reticulocytosis; (b) elevated serum bilirubin principally of the indirect type; (c) increased fecal urobilinogen; (d) frequent splenomegaly; (e) normal liver function tests otherwise; (f) normal cholecystogram; and (g) liver biopsy showing yellowish brown, iron staining, hemosiderin pigment more uniformly distributed throughout the lobule.

4. Obstructive jaundice may be differentiated by: (a) presence of more intense jaundice; (b) diminished or absence of urinary and fecal urobilinogen; (c) normal liver structure with bile plugs and presence of bilirubin pigment in parenchymal cells after prolonged obstruction.

SUMMARY

1. Twenty-seven liver biopsies established cases of Dubin-Johnson's syndrome have been collected from the literature. The authors' experience is concerned with two of these.

2. The absolute criterion for diagnosis

is the demonstration of an iron free, non-bilirubin coarse granular brown pigment in the parenchymal cells about the central vein of the hepatic lobule.

3. The presence of this disease and non-functioning gall bladder does not militate against surgery since cholelithiasis may be associated.

4. Insufficient evidence is available to warrant consideration of therapeutic abortion.

5. Gilbert's disease, residual viral hepatitis, hemolytic jaundice, and obstructive jaundice offer the greatest problem in differential diagnosis.

REFERENCES

1. Dubin, I. N. and Johnson, F. B.: Chronic idiopathic jaundice with unidentified pigment in liver cells; a new clinico-pathological entity with a report of 12 cases, *Medicine* 33:155 (September) 1954.
2. Spring, H. and Nelson, R. S.: Persistent non-hemolytic hyperbilirubinemia associated with lipochrome-like pigment in liver cells, *Ann. Int. Med.* 41:952, 1954.
3. Klagman, A. and Efrati, P.: Prolonged jaundice with unidentified pigment in liver cells, *Lancet* 1:538, 1955.
4. Stein, Y.: Chronic idiopathic jaundice with unidentified pigment in liver, *Gastroenterology* 29:1087 (December) 1955.
5. Case record; Mass. Gen. Hosp.—Clinicopathological Conference: Idiopathic jaundice with pigment in liver cells, *New England J. Med.* 253:335, August, 1955.
6. Brown, N. L. and Schnitka, T. K.: Constitutional non-hemolytic jaundice with lipochromic hepatosis (Dubin-Spring disease), *Am. J. Med.* 21:292 (August) 1956.
7. John, G. G. and Knudtson, K. P.: Chronic idiopathic jaundice; two cases occurring in siblings with histochemical studies, *Am. J. Med.* 21:138 (July) 1956.
8. Nelson, R. S.: Persistent non-hemolytic hyperbilirubinemia with unidentified pigment in liver cells; 1 case, *Gastroenterology* 30:301, 1956.
9. McCurley, G. and Muleisen, P.: To be published.
10. Tamaki, H. T. and Carfagno, S. C.: Chronic idiopathic jaundice with unidentified pigment in liver cells, *Arch. Int. Med.* 99:294 (February) 1957.
11. Damashek, W. and Singer, J.: Familial non-hemolytic jaundice; constitutional hepatic dysfunction with indirect Van den Berg reaction, *Arch. Int. Med.* 67:239, 1944.

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NATIONAL DIABETIC WEEK

The yearly cooperative effort by the American Diabetes Association for a week of attention to the finding of hidden diabetics will start on November 17th. This worthy enterprise deserves the help and encouragement of all physicians.

It is thought that one million persons have diabetes who are not aware of it. The American Diabetic Association is the only national group of its type composed exclusively of physicians. Its efforts to improve the care of diabetics and to further their interests are commendable. The success of the total effort depends upon

the complementary effort of each physician.

HOSPITAL FACILITIES COMPARED WITH THE TAX BURDEN IN LOUISIANA

There are too many criteria of comparison in Louisiana in which we are first where we would be better off if we were last.

One of these is the rate of taxation. The state tax handbook issued by the Louisiana Public Affairs Research Council shows that state taxes paid by residents of Louisiana in the fiscal year 1955-1956 were at the rate of \$114.94 per capita, or the fifth highest in the nation. But when state taxes are related to per capita income, which reflects the ability of individuals to pay taxes, we have the highest rate in the United States—\$8.62 out of every hundred dollars of income per resident.

The tax payers and the legislators will face, as in the past, at the next meeting of the legislature, proposals for expenditure on additional state built, owned, and operated hospitals. In this connection, a timely report in the July 1957 issue of this Journal, by Dougherty, Hitt, and London, entitled "Hospital Facilities in Louisiana, 1953," has presented interesting and important facts concerning the hospital situation in this state. While not purporting to reveal anything new—the facilities are literally under our noses—it displayed figures for a comprehensive look at the hospital picture.

Two points stand out. First, the people of Louisiana have adequate opportunity for hospital care, as compared with other southern states and the nation. There are 4.52 general beds per 1000 population, while the average of all the other Southern States is 3.66 beds per 1000 population. The corresponding figure for the nation is 4.19. Louisiana ranks with New York, Pennsylvania, California, Wisconsin, and others in this category of hospital beds.

The second point is (and this is a startling fact) that there are 8,040 private

and 4,804 state general hospital beds in Louisiana. That is, one out of every three general hospital beds in this state is built, owned, and operated by the state with no direct charge made to the occupants using them. This means in terms of costs that for each two days, approximately, of hospital care paid for by the total productive, self sustaining elements of the community in private hospitals, an additional day for indigents must be provided by taxes. Almost half of the babies born in the state each year are born in "free" hospitals. The state is spending almost a million dollars a week on medical care for its people.

When comparisons are made of local and state owned governmental beds of all types, including mental hospitals, Louisiana again outranks the other Southern States and stands a little below the national average. The figures per 1000 population are: United States 5.85, Louisiana 5.17, and the South 4.08.

Our largest State hospital, Charity Hospital of Louisiana at New Orleans, ranks fifth in size, fourth in number of admissions, and first in number of live births.

It is safe to say that one third of the population is not medically indigent. The average medical costs are \$67 per person yearly. Louisiana is furnishing a greater

quantity of free medical care than other states in the South and in most of the nation. While the health of our people is good, it is not significantly better than that of people in states not spending nearly as much on tax-paid medical care as we are spending.

Experience shows that once any welfare expenditure is established it can never be stopped or even reduced. Every politician elected to an office must advocate the continuance or increase of those "give away" projects already in operation. For this reason, welfare costs in the various forms mount yearly. Taking into account the change in the value of the dollar, and also, the 27 per cent increase in population, the present state administration is spending at a rate two and one half times greater than the rate of the Jones administration in 1940-1944.

Consideration of these facts and figures shows clearly that in general hospital beds, both private and public, the state ranks above the South as a whole, and compares favorably with the rich states of the nation. We are, however, as individuals, carrying the heaviest tax burden in the nation. Accordingly, additional free, tax supported beds should not be built at this time.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

SECOND ANNUAL CONFERENCE OF THE
COUNCIL ON RURAL HEALTH OF THE
AMERICAN MEDICAL ASSOCIATION
HELD AT PURDUE UNIVERSITY,
LAFAYETTE, INDIANA, FOR THE
CHAIRMEN AND MEMBERS OF THE
STATE RURAL HEALTH
COMMITTEES

This year's session, again headed by Dr. F. S. Crockett in his home town, was attended by about forty-five members, including the Executive Secretary of some of the state committees. It was a

one and one-half day meeting that started Friday morning, October 4, 1957, at 9:00 A.M. and finished at 12:00 Noon, Saturday, October 5, 1957.

The first morning's session was given over to discussion by Dr. George Beal and Dr. Joseph Bolin, Sociologists at Iowa State College, on "How Rural People Accept New Ideas". This program demonstrated how new ideas were suggested to two or three "key people" and demonstrated the technique used by which the problem was finally carried out, the goal reached, and the plan accomplished.

The afternoon of Friday was given over to three speakers: Mr. C. A. Vines, Secretary, Extension Committee on Organization and Policy, Land Grant College Association, Little Rock, Arkansas, Mr. Beatty H. Demit, Chairman, National Grange Interim Health Committee, Indiana, Pennsylvania, and Mr. Charles B. Shuman, President, American Farm Bureau Federation, Chicago, Illinois. These speakers gave their own ideas on public health and what the three organizations were doing to accomplish better rural health and the utilization of all the facilities at hand for the consummation of this problem.

Mr. Vines brought out adequately the role of the County Agent in stimulating good medical care in his community. Mr. Demit went into detail in reference to some of the plans the National Grange had worked out in connection with the interest of the health of its community. Mr. Shuman explained the stand of the American Farm Bureau in better medical care, and all three insisted that their own organizations were strongly against socialized medicine as is the medical profession.

A social hour was enjoyed in the home of Dr. F. S. Crockett and a banquet that night at Purdue University's Union Building was well attended. The speaker at the banquet was Dr. Earl Butz, Dean of Agriculture and Director, Agricultural Extension Service, Purdue University, Lafayette, Indiana, and a former assistant to Mr. Benson in

Washington, D. C. The title of his discussion was "Big Government and You." It was very enlightening to hear a man of Dr. Butz's experience, who had spent two years in government service, explain the many difficulties in over-regimentation. In spite of the many reasons he gave for big government, big spending, and big ideas of the bureaucrats, he was unable to give us specific answers. He chided us for some of our complacency, but warned us to be ever alert and to keep in constant contact with our senators and representatives.

Saturday morning was given over to discussion of the individual problems of the Chairmen and Secretaries of the different states. Some excellent reports were brought out from North Carolina, Ohio, Pennsylvania, and California.

It is the studied judgment of your chairman that Louisiana, with its State Health Council and the local Health Councils, probably still leads the country, for the most part, in its many accomplishments.

We promised the group that Louisiana would try to help Mississippi entertain the Thirteenth Health Conference next March 6-8, at Jackson, Mississippi.

J. P. Sanders, M. D.
Chairman
Rural and Urban Health Committee

FINAL STATUS OF MEDICAL LEGISLATION AT ADJOURNMENT OF THE FIRST SESSION 85TH CONGRESS

The following material has been furnished us by the Washington office of the American Medical Association:

This is an interim report on health and medical legislation in the 85th Congress. It summarizes all action taken on health measures up to the time of adjournment on August 30, and lists all bills that will be awaiting decision in the second session starting January 7, 1958.

The small number of health-medical bills enacted this year might be regarded as deceptive. Actually 441 of these bills were introduced—a record total even for a first session. Congress deferred action on most of them for a variety of reasons—a desire for more extensive hearings, economy, and, possibly, an inclination to save popular-appeal bills for next year. Experience has shown that the second session, always an election year, is the crucial one, when forces line up for final decisions on the big, controversial medical bills.

For example, no action was taken this year on such important measures as U. S. aid to medical schools and health insurance for federal civilian workers, nor on a growing list of ideas for government-paid hospitalization of OASI beneficiaries, a proposal that would have an obvious impact on the practice of medicine. There is every reason to believe Congress will not neglect these subjects next year.

HEALTH LEGISLATION ENACTED

Doctor Draft Extension (P.L. 85-62)—Because the doctor draft was set to expire July 1, this was one of the first health measures passed by the 85th Congress. It gives Selective Service authority until July 1, 1959 (when both this amendment and the regular draft expire) to call certain physicians up to age 35 for military service. Only those under age 35 with obligations under the regular draft and who have been deferred for any reason may be called. Defense Department, meanwhile, says it is getting enough medical school graduates as reservists to preclude use of the new law at this time.

Medical Research (P.L. 85-67)—Another early enactment was the fiscal 1958 budget for the

Department of Health, Education, and Welfare. Congress voted \$2,503,130,381 for all HEW programs, including record high totals for medical research through the National Institutes of Health. Congress can—and in all likelihood will—receive requests from the Administration for additional money during the current fiscal year through a deficiency appropriation.

Vendor Medical Payments (P.L. 85-110)—This law is intended to resolve some problems arising out of the Social Security Amendments of 1956 with particular reference to vendor medical payments for public assistance recipients. Under P.L. 110, states are given the choice of either: (a) using federal funds for vendor medical payments within the \$60 a month per recipient maximum; or (b) establish a single medical vendor payment financed by federal funds which were set by a 1956 law at one-half of \$6 a month per adult and one-half of \$3 per child, to be matched by states. States also can continue to make direct payments to recipients for medical and subsistence expenses.

Disability Freeze Extension (P.L. 85-109)—Under this law, a new deadline of July 1, 1958, is established for disabled persons covered under social security to apply for full retroactivity under the disability freeze passed in 1954. Applications filed by next July will allow workers to count the full period of disability provided they were eligible at the time the disability was incurred. After next July 1, any period of disability established for a worker cannot begin earlier than one year before the application is filed.

Indian & Non-Indian Hospitals (P.L. 85-151)—At the urging of some western members of Congress, P.L. 151 was enacted to authorize federal funds to help build non-profit or public hospitals and diagnostic or treatment centers on or near Indian reservations; the extent of federal contribution will be determined by the percentage of care given eligible Indians. Facilities have to agree to care for Indians and non-Indians.

Vocational Rehab. Traineeships (P.L. 85-198)—This measure extends from two to three years the maximum period of time over which the federal government can pay for partial financing of traineeships in physical medicine and rehabilitation. It amends the Vocational Rehabilitation Act which was expanded in the 83rd Congress.

Vocational Rehab. Planning (P.L. 85-213)—This amends the Vocational Rehabilitation Act by extending the time federal funds may be used for planning, preparing and initiating expansion of programs in the states. Congress was asked to act when the July 1 deadline approached with considerable unexpended funds on hand.

Codification of Veterans Laws (P.L. 85-56)—Without making any substantive changes in existing law, this Congress brought into a single code all veterans benefit laws, including those providing for hospital and medical care. Some laws date back thirty years.

Poultry Inspection (P.L. 85-172)—Under this law, federal inspection of poultry moved in interstate commerce becomes compulsory.

Military Nurses Incentives (P.L. 85-155)—In line with earlier efforts to make careers in the military more attractive, Congress passed this law improving career prospects for military nurses by making more and higher ranks available.

BILLS THAT PASSED ONE BRANCH OF CONGRESS

Pulmonary Tuberculosis (H.R. 1264)—The bill, declaring veterans suffering from active pulmonary tuberculosis to be permanently and totally disabled for pension purposes while hospitalized, passed the House but is pending in the Senate Finance Committee.

HEARINGS HELD BUT NO FURTHER ACTION TAKEN

Bricker Amendment (S.J. Res. 3)—The long-standing proposed amendment to the Constitution by Senator Bricker (R., Ohio) limiting the domestic effect of treaties and other international agreements.

Civil Aviation Medicine (S. 1045)—Would establish in the Civil Aeronautics Administration an Office of Civil Aviation Medicine along with a Medical Research Institute.

Welfare-Pension Plans Registration (S. 1122, S. 2888)—Provide for registration, reporting and disclosure of employee welfare and pension benefit plans. Both House and Senate Committee hearings held and some action expected next session.

Highway Safety (S. 1292)—Hearings in House but not on any specific bills. Proposals include compulsory installation of safety belts.

OVR Pilot Center (S. 2068)—Would give the Office of Vocational Rehabilitation authority to use federal funds for construction of facilities for a pilot rehabilitation center in the Washington, D. C., area.

Non-Service-Connected Care (H.R. 58)—Would impose added requirements on veterans with non-service-connected disabilities seeking hospitalization or domiciliary care in VA facilities.

Barbiturates and Amphetamines Control (H.R. 503 & others)—Regulate the manufacture, distribution and possession of habit-forming barbiturate and amphetamine drugs, and provides for registration and record-keeping, but with doctors exempted.

Department of Civil Defense (H.R. 2125 & others)—Establish a new executive Department of Civil Defense which would have supremacy over the military in times of disaster in certain defense areas.

Salary Rise for VA Doctors (H.R. 6719)—Increases salaries of medical personnel in VA, and also raises optometrists to the level of physicians. (Reported in House.)

Chemical Additives (H.R. 6747 & others)—Requires pre-testing of many chemical additives to be used in food processing and marketing. The House has held extensive hearings on this subject.

Grants-in-Aid Study (H. Res. 312)—Provides for a Select Committee of the House to study federal grants-in-aid to state and local governments, and other groups. It got as far as House Rules Committee approval.

Advisory Committee for the Blind (H.R. 8427)—Establishes a temporary Presidential commission to study and report on the problems relating to blindness and the needs of blind persons.

BILLS STILL IN COMMITTEE; NO HEARINGS HELD

Hospitalization for Aged (H.R. 9467, 9448 & others)—Various bills provide through different approaches a certain number of days of free hospitalization each year for Old-Age and Survivors Insurance recipients and beneficiaries; some bills also would pay in-hospital surgical and medical care costs.

Compulsory Health Insurance (S. 844, H.R. 3764)—A 1957 version of the old and rejected national compulsory health insurance measures of 1948, the sponsors being Senator Murray (D., Mont.) and Rep. Dingell (D., Mich.).

Liberalizing OASI Coverage (S. 173 & others)—These measures would liberalize age and coverage requirements in the OASI disability program.

OASI Coverage for Doctors (H.R. 8883)—Physicians would be brought under Social Security on a compulsory basis.

Jenkins-Keogh Plan (H.R. 9 and 10)—Defer federal income taxes on portions of earnings of the self-employed for the purchase of retirement plans.

OASI Wage Base Increase (H.R. 7669)—Increases the wage base, on which tax is computed, from the present \$4,200 to \$6,000.

Federal Workers Health Insurance (S. 2339 & others)—Provides for a voluntary, contributory health insurance program for federal civilian employees and their dependents; both basic and major medical coverage included.

Overseas Federal Medical Care (H.R. 6141)—Provides health and medical services for U. S. civilians overseas who are employed in government jobs, and also would cover their dependents.

Federal Medical School Aid (H.R. 6874)—Authorizes federal grants to medical schools and research facilities for construction of classrooms and laboratories for teaching.

National Radiation Institute (S. 1228 & H.R. 4820)—Establish a National Radiation Health Institute within the National Institutes of Health.

Lobbying Act Amendments (S. 2191, H.R. 8346)—Would rewrite regulations covering lobbyists and lobbying in Congress.

Federal Loans to Hospitals (H.R. 1979)—For those hospitals interested in construction loans rather than Hill-Burton grants, these bills would authorize long-term government loans.

Reinsurance (S. 1750, H.R. 6506)—Permits pooling by various insurance companies without regard to the antitrust laws for purpose of encouraging new experiments in health insurance coverage.

Aid for the Aged (H.R. 383 and others)—Authorizes grants for studies and projects for the aged.

Federal Advisory Health Council (H.R. 2435 & others)—Establishes a Federal Advisory Council on Health, as recommended by the Hoover Commission.

Longshoremen's Act (H.R. 7303, S. 2400)—Amends Longshoremen's and Harbor Workers' Compensation Act so that injured workers can select their own physician and hospital.

Labeling for Household Use (H.R. 7388 & others)—Regulating the labeling of hazardous substances intended for household use.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE MEDICAL DEPARTMENT UNITED STATES ARMY IN WORLD WAR II

Surgery in World War II, Ophthalmology and Otolaryngology

In time of war the specialties of ophthalmology and otolaryngology must treat the diseases and meet the demands of what amounts to a tremendous civilian practice, while at the same time treating devastating combat-incurred injuries of these specialized areas. Intraocular foreign bodies are a serious peacetime industrial problem. In wartime, the management of these injuries is a heavy burden quantitatively. The destructive effects of wounding agents make them a far heavier burden qualitatively.

Introductory chapters in both sections of this volume deal with the administrative aspects of wartime ophthalmology and otolaryngology.

Part I describes the major ophthalmologic conditions, both traumatic and non-traumatic, encountered in World War II. Eye centers for the treatment of these injuries with concentrated, specialized care, were established overseas and in the United States. Eyes which might otherwise have been lost were conserved. These centers carried out their missions with a notable economy of personnel and equipment. Also described is the artificial eye program, a brilliant example of Medical and Dental Service cooperation in a new technique.

Part II covers the major problems of otolaryngology in wartime as seen by the general medical officer as well as by the highly trained specialist. There is a section on narcosynthesis.

There are detailed accounts of the Army programs for rehabilitation of the blinded and the deafened casualties. The lessons learned, the objectives attained, are directly applicable to any peacetime management of the blind and the deaf.

Copies may be obtained from Superintendent

of Documents, Government Printing Office, Washington 25, D. C.—\$5.00 per copy. (Catalog No. D 104.11:Su 7/7).

The following volumes are also available:

Hospitalization and Evacuation, Zone of Interior, World War II. 1956. 503 p. il.

Cloth, \$4.00 Catalog No. D 114.7:M 46/v.1

Dental Service in World War II. 1955. 362 p. il.

Cloth, \$3.25 Catalog No. D 104.11:D 43

Preventive Medicine in World War II, Volume II, Environmental Hygiene. 1955. 404 p. il.

Cloth, \$3.50 Catalog No. D 104.11:P 92/v.2

Preventive Medicine in World War II, Volume III, Personal Health Measures and Immunization. 1955. 394 p. il.

Cloth, \$3.25 Catalog No. D 104.11:P 92/v.3

Surgery in World War II, Hand Surgery. 1955. 447 p. il.

Cloth, \$3.75 Catalog No. D. 104.11:Su 7/2

Surgery in World War II, General Surgery. 1955. 417 p. il.

Cloth, \$4.25 Catalog No. D 104.11:Su 7/4/v.2

Surgery in World War II, Physiologic Effects of Wounds. 1952. 376 p. il.

Cloth, \$3.50 Catalog No. D 104.11:Su 7

Surgery in World War II, Vascular Surgery. 1955. 465 p. il.

Cloth, \$4.25 Catalog No. D 104.11:Su 7/3

Surgery in World War II, Ophthalmology and Otolaryngology. 1957. 632 p. il.

Cloth, \$5.00 Catalog No. 104.11:Su 7/7

Orthopedic Surgery in the European Theater of Operations. 1956. 397 p. il.

Cloth, \$4.00 Catalog No. D 104.11:Su 7/5

Orthopedic Surgery in the Mediterranean Theater of Operations. 1957. 368 p. il.

Cloth, \$4.00 Catalog No. D 104.11:Su 7/6

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-first annual meeting of The New Orleans Graduate Medical Assembly will be held March 3, 4, 5 and 6, 1958, headquarters at the Roosevelt Hotel.

Eighteen outstanding guest speakers will participate and their presentations will be of interest to both specialists and general practitioners. The program will include fifty-four informative discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, medical motion pictures, round-table luncheons and technical exhibits.

The Assembly has been officially approved for Category I by the Commission on Education of the American Academy of General Practice. Thirty hours of formal credit will be allowed for attendance at this meeting.

Following the meeting in New Orleans, arrangements have been made for a postclinical tour to Mexico City, Cuernavaca, Taxco and Acapulco, leaving from New Orleans on Friday, March 7 and returning on Tuesday, March 18.

Details of the New Orleans meeting and the postclinical tour are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

LOUISIANA ACADEMY OF GENERAL PRACTICE

The Eleventh Annual Assembly of the Louisiana Academy of General Practice was held October 8-10, 1957, at Monroe, Louisiana. Dr. Julius Daigle, Paincourtville, Louisiana is president of the Academy. Speakers on the scientific program included:

Dr. R. L. Sanders, Memphis, Tenn.
Dr. T. B. Moore, Memphis, Tenn.
Dr. E. S. McLarty, Galveston, Texas
Dr. W. E. Guerriero, Dallas, Texas
Dr. H. E. Banghart, Philadelphia, Pa.
Dr. D. L. Anderson, Monroe, Louisiana

The luncheon meeting on October 9, was addressed by Dr. J. P. Culpepper, Hattiesburg, Miss., President of the Southern Medical Association.

Featured speaker at the Annual Banquet was Dr. H. T. Jackson, Fort Worth, Texas, President-elect of the American Academy of General Practice.

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The twenty-first annual meeting of the New Orleans Graduate Medical Assembly will be held March 3-6, 1958, headquarters at the Roosevelt Hotel. Listed below are the Chairmen and Vice-chairmen of the Program Committees for this year:

CARDIOLOGY AND INTERNAL MEDICINE

Philip H. Jones, M. D., Chairman
George E. Burch, M. D., Vice-chairman

DERMATOLOGY

Lee D. McLean, M. D., Chairman
V. Medd Henington, M. D., Vice-chairman

GASTROENTEROLOGY

Donovan C. Browne, M. D., Chairman
Daniel N. Silverman, M. D., Vice-chairman

GENERAL PRACTICE

Mannie D. Paine, Jr., M. D., Chairman
Nicholas J. Chetta, M. D., Vice-chairman

GYNECOLOGY

C. Gordon Johnson, M. D., Chairman
Curtis Tyrone, M. D., Vice-chairman

NEUROPSYCHIATRY

Theodore L. L. Soniat, M. D., Chairman
T. A. Watters, M. D., Vice-chairman

OBSTETRICS

Fred K. Vaughn, M. D., Chairman
Isadore Dyer, M. D., Vice-chairman

OPHTHALMOLOGY

William B. Clark, M. D., Chairman
George M. Haik, M. D., Vice-chairman

ORTHOPEDIC SURGERY

Lyon K. Loomis, M. D., Chairman
Rufus H. Alldredge, M. D., Vice-chairman

OTOLARYNGOLOGY

Lucian W. Alexander, M. D., Chairman
Charles L. Cox, M. D., Vice-chairman

PATHOLOGY

Edwin H. Lawson, M. D., Chairman
Andrew V. Friedrichs, M. D., Vice-chairman

PEDIATRICS

W. C. Rivenbark, M. D., Chairman
James E. Bailey, M. D., Vice-chairman

RADIOLOGY

Meyer D. Teitelbaum, M. D., Chairman
William S. Neal, M. D., Vice-chairman

SURGERY

Howard Mahorner, M. D., Chairman
Ambrose H. Storck, M. D., Vice-chairman

UROLOGY

W. E. Kittredge, M. D., Chairman
Max M. Green, M. D., Vice-chairman

LIVER AILMENT GROWS AS PUBLIC HEALTH PROBLEM

Infectious hepatitis, a liver ailment, is creating more interest among public health workers than probably any other virus disease except polio, an American Medical Association publication said recently.

The number of reported cases has "jumped dramatically" since hepatitis was added to the list of nationally reported diseases in 1952, and it is now the third most common infectious disease in the U. S., according to an article in February Today's Health.

"Whether this represents an actual increase in incidence or merely better recognition . . . is open

to question. But one thing is certain: never before has concern over it been so high," Miss Marion A. Briggs, a New York free lance writer, said in the article.

Its importance is not in the number of deaths it causes, which are few (only three to five in 1,000 cases), but in the long time its victims must spend in convalescence—from two to three months.

In addition, it is estimated that about 30 per cent of the adult population has had infectious hepatitis without knowing it. These mild unrecognized cases constitute a threat to a community since they provide unknown carriers of the disease, Miss Briggs said.

Infectious hepatitis, called "camp jaundice," "field jaundice," "catarrhal jaundice" and "infectious jaundice" in the past, is an inflammation of the liver; one of its common symptoms is jaundice—a yellowish color of the skin and eyes.

A major problem created by the disease is that its causative agent—generally believed to be a virus—has never been isolated. This in turn has prevented the development of a specific treatment or a preventive vaccine. The best treatment is still bed rest and a good diet.

Hepatitis' most common means of spreading is apparently by personal contact. When one member of a family gets it, other members almost always get it too. It has been known to be spread by drinking water, food, and milk. Flies have also been suspected.

TESTS SHOW CHEWING TOBACCO'S EFFECT ON BODY

Heart researchers provided some new information for doctors wishing to advise their patients about the effects of chewing tobacco on the circulatory system.

Although 81 million pounds of chewing tobacco are consumed annually in the U. S., practically nothing is known about its effect on the body. However, four Cincinnati researchers now have conducted a series of tests on men who habitually chewed tobacco. They reported their findings in the Feb. 2 Journal of the American Medical Association.

They found that chewing tobacco produced changes in the body similar to those caused by smoking cigarettes, including increases in pulse rate and blood pressure and a decrease in skin temperature. It also produced changes in the ballistocardiograph, which measures the impact on the body of the heart's thrust as it pumps blood. Smoking did not produce ballistocardiograph changes.

The 24 men, ranging in age from 34 to 71 years, chewed low-nicotine tobacco or a regular commercial brand. Some also chewed gum for comparison.

After chewing commercial tobacco, the pulse rates of 14 men increased markedly, with a aver-

age increase of 13.4 beats a minute. With low-nicotine tobacco, the rate remained constant in three men, decreased in one and increased by an average of 6.5 beats a minute in nine men. After chewing gum one man showed a slight rise and one a slight fall.

All showed definite increases in blood pressure after chewing commercial tobacco.

In most of the men the pattern of skin temperature changes was similar to that reported in cigarette smoking studies. Forehead temperatures remained nearly constant with both types of tobacco and gum, but temperatures in the fingers and toes decreased after chewing tobacco.

The ballistocardiograph changes, which were recorded in 23 men, were the greatest about 14 minutes after chewing began. Younger men who smoked in other studies did not show such changes.

The possibility that more nicotine is absorbed by the body during chewing than during smoking might explain these changes in the older men, the authors said.

The average amount of tobacco chewed contained about 10 times more tobacco than the standard cigarette. In addition, the tobacco was held in the mouth longer than cigarette smoke usually is. It is estimated that more than two-thirds of the nicotine in cigarette smoke is absorbed through the membranes of the mouth.

Conducting the research, which was supported by a grant from the Tobacco Industry Research Committee, New York, were Dr. David L. Simon, Dr. Arnold Iglauer, Dr. John Braunstein and Robert E. Rakel of Cincinnati General Hospital and Kettering Laboratory, University of Cincinnati.

TUBERCULOSIS

Veterans administration hospitals are safe places for volunteers to work, so far as danger of getting tuberculosis goes. Although tuberculosis afflicts about one out of every 1,000 persons in the general population, a survey of VA hospitals and other installations showed not one of 11,375 volunteer workers developed the disease after coming on duty. News Item, Sc. News Letter, Nov. 3, 1956.

It is generally accepted that tuberculosis is the most common cause of pulmonary cavitation. That tuberculosis is a frequent occurrence in third-stage silicosis is evident when one considers that over 50% of the conglomerate masses are said to be infected with tuberculosis. Thus, when cavitation occurs in a conglomerate mass, it is usually presumed to be of tuberculosis nature. However, the occurrence of nontuberculous cavitation must not be overlooked. C. S. Morrow, M.B. and R. N. Armen, M.D., *Annals of Internal Med.*, Oct. 1956.

It has never been possible to confine a disease such as tuberculosis to a narrow specialty. G. L.

Wherrett, M.D., Canadian J. of Pub. H., Nov. 1956.

True progress in law, in medicine—in almost any area of vital human concern—will come from the discovery and cultivation of common interests by people who share a common purpose, unadulterated by special political objectives or ideological differences. Editorial, World Med. J., May, 1956.

All diabetics should have annual chest X-rays. Any sudden increase in insulin requirements or loss of weight, even though it appears voluntary, should be followed by a roentgenographic examination of the chest. By earlier diagnosis the prognosis of tuberculosis in the diabetic will be immeasurably improved. Treatment of both dis-

eases must be aggressive. Robert H. Joelson, M.D., Henry Dolger, M.D., J. of Mt. Sinai Hosp. of N. Y., July-Aug. 1956.

Until recently the emphasis of tuberculosis control programs has been centered on mass surveys, mobile roentgenographic units, and hospital admissions, while a segment of the population with one of the highest rates of infection has been somewhat neglected. Continuous case-finding programs in prisons offer a fertile field for the control of tuberculosis for several reasons. The increased prevalence rate of the disease in prisoners make such programs much more rewarding than are those which are carried out in the general population. Harvey I. Meyers, M.D., George Jacobson, M.D., and Frank W. Oechsli, M.D., Am. Rev. of Tuberc., Oct. 1956.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

WOMAN'S AUXILIARY LOUISIANA STATE MEDICAL SOCIETY ORLEANS PARISH

The Woman's Auxiliary to the Orleans Parish Medical Society held its first meeting of the fall season Wednesday afternoon October 9th at the Orleans Club. The president Mrs. Eugene H. Countiss presided.

Mrs. Boni J. DeLaurel, president of the Woman's Auxiliary to the Louisiana State Medical Society, was guest of honor at the tea and program which followed the meeting. Mrs. DeLaurel spoke on "The Doctor's wife in volunteer work in the community". It inspired us all to want to 'dig in' and accumulate a great number of hours of work in cancer, American Heart, Red Cross, hospital auxiliary work and the many other branches of volunteer services.

Of interest to the mothers, grandmothers and

"aunts" was the program given by Mmes. John Guarisco and Charles Giblin who spoke on "The Child in the Nursery School".

Receiving with Mrs. Eugene H. Countiss were Mesdames Boni J. DeLaurel, Albert F. W. Habeeb and Mrs. Abe Golden.

Hostesses for the afternoon were Mesdames James L. Treadway, Albert B. Pavy, Jr., Daniel W. Beacham, Charles Farris, Jr., Carl Gulotta, B. Holly Grimm and William S. Neal. Mrs. Fred O. Brumfield is chairman of hostesses.

The tea table was centered with a beautiful arrangement of flowers in the autumn shades and presiding at the silver coffee and tea services were Mesdames Walter F. Becker and Frank S. Oser, Jr.

Mrs. Branch J. Aymond,
Publicity Chairman.

BOOK REVIEWS

Etiologic Factors in Renal Lithiasis; by Arthur J. Butt, Springfield, Illinois, Charles C Thomas, 1956, Pp 401. Price \$12.50.

The author with nineteen contributors discusses the various factors and hypotheses in renal lithiasis. The complex picture is presented in eighteen chapters, and the topics range from anatomy to urinary calculi analysis.

The subject matter is well organized and the coverage in each chapter is comprehensive. An attempt is made to correlate past with present findings and the presentation of divergent views on the etiology of renal lithiasis enables the reader to obtain a balanced perspective. In his foreword,

W. F. Braasch considers that the book obtains an intelligent appraisal of advances made in the etiology of urinary calculi.

The extensive bibliography and the wide coverage of the various types of calculi make the book a valuable source of reference. Of particular interest is the development of the role colloids and ground substance play in stone formation. The use of hyaluronidase by the author in stone prevention is thought-provoking. He emphasizes that it is merely an adjunct in stone therapy and that the dosage must be controlled from day to day otherwise the drug may prove harmful.

The book should prove helpful to urologists, in-

ternists, surgeons, endocrinologists, chemists, and research workers.

JOHN G. MENVILLE, M. D.

Roentgen Signs in Clinical Diagnosis; by Isadore Meschan, M. A., M. D., with the Assistance of R. M. F. Farrer-Meschan, M. B., B. S., (Melbourne, Australia). Philadelphia and London, W. B. Saunders Co., 1956, Pp. 1058, illus., 2216 on 890 figures, Price, \$20.00.

While it was the intention of the authors that this volume could be employed independently of their previous work, "Atlas of Normal Radiographic Anatomy" and is a separate didactic presentation, the two volumes result in an excellent and most satisfying combination of informative material covering normal anatomy and the roentgen signs of disease processes. The author's approach to the teaching of radiology is intended to furnish: "an objective description of the aberration from the normal"; and, "an integration with the known clinical data to arrive at an impression or differential diagnosis".

There are thirty-one chapters and an index. The first three chapters are devoted to fundamental principles, protection from roentgen irradiation and the functions of the radiologist. Chapters Four through Eleven are concerned with the normal and abnormal roentgenology of bones and joints. Fractures, congenital abnormalities and bone disease are comprehensively covered. The organization of bone diseases into radiolucent lesions involving multiple bones and a single extremity as distinguished from osteosclerotic and hypertrophic bone diseases of the extremities is noteworthy and immeasurably increases the reference value of this text.

The skull and facial bones are discussed in Chapters 12 and 13. The division of the lesions of the skull bones into single and multiple, diffuse and demarcated, radiolucent and increased radiopacity is a valuable contribution. Chapter 14 is concerned with the radiography of the vertebral column.

Chapters 15 through 23 consider the chest and its subdivisions. These sections are also organized into the single and multiple, diffuse and nodular, regular and irregular pneumonic lesions. Chapter 19 considers those pulmonary lesions characterized by increase in linear markings. The lung lesions characterized by increased radiolucency in the lung fields is covered in Chapter 20.

Chapter 24 is devoted to the value of the plain survey of the abdomen. The radiography of the urinary tract and suprarenal glands is covered in Chapter 25. The gall bladder and its functions

and diseases are discussed in Chapter 26.

The gastro-intestinal tract is comprehensively covered in Chapters 27 through 30. Chapter 31 is concerned with radiography in obstetrics and gynecology.

The index is adequate and the references are intentionally limited to provide the reader with "key" articles which will provide additional references. The diagrams and illustrations are outstanding and numerous. The legends are adequate and clear. The text is well-written, comprehensive and interesting. This text and the "Atlas of Normal Radiographic Anatomy" are valuable contributions to every physician interested in diagnostic roentgenology.

J. N. ANÉ, M. D.

PUBLICATIONS RECEIVED

Dover Publications, Inc., N. Y.: *Fads and Fallacies in the Name of Science*, by Martin Gardner (formerly published under the title *In the Name of Science*).

Grune & Stratton, N. Y.: *A Mount Sinai Hospital Monograph on The Malabsorption Syndrome*, edited by David Adlersberg, M. D.; *Roots of Modern Psychiatry*, by Mark D. Altschule, M. D., with the collaboration of Evelyn Russ; *General Techniques of Hypnotism*, by Andre M. Weitzenhoffer, Ph.D.

Paul B. Hoeber, Inc., N. Y.: *Clinical Gastroenterology*, by Eddy D. Palmer, M. D.; *Introduction to Biostatistics*, by Huldah Bancroft, Ph.D.

The C. V. Mosby Co., St. Louis: *Headache, Diagnosis and Treatment*, by Robert E. Ryan, M. D. (2nd edit.)

Philosophical Library, N. Y.: *Manual of Nutrition*; *The Chronically Ill*, by Joseph Fox, M. D.

W. B. Saunders Co., Phila.: *The Story of Peptic Ulcer*, conceived by Richard D. Tonkin, M. D., and characterized by Raymond Keith Hellier, F.R.S.A.

Charles C Thomas, Publisher, Springfield, Ill.: *Methods in Surgical Pathology*, by Henry A. Teloh, M. D.; *The Dermatologist's Handbook*, by Ashton L. Welsh, M. D.; *The Infantile Cerebral Palsies*, by Mrs. Eirene Collis, Dr. W. R. F. Collis, Dr. William Dunham, Dr. L. T. Hilliard, Dr. David Lawson, and Sir Francis Walshe; *Technique of Fluid Balance, Principles and Management of Water and Electrolyte Therapy*, by Geoffrey H. Tovey, M. D.; *The Bases of Treatment*, by Neuton S. Stern, M. D., and Thomas N. Stern, M. D.; *Diseases of the External Ear*, by Ben H. Senturia, M. D.

Williams & Wilkins Co., Baltimore: *Extensile Exposure*, by Arnold K. Henry, M. D. (2nd edit.)

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*Lichstein, J.; Morehouse, M. G., and Osmon, K. L.: Pro-Banthine in the Treatment of Peptic Ulcer. A Clinical Evaluation with Gastric Secretory, Motility and Gastroscopic Studies. Report of 60 Cases, Am. J. M. Sc. 232:156 (Aug.) 1956.

SEARLE

SELECTION OF SUITABLE SULFONAMIDE IS OF PRIME IMPORTANCE IN LONG-TERM THERAPY OF URINARY TRACT INFECTIONS

Drug Must Meet High Standards of Efficacy and Safety

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An editorial in the Journal of the American Medical Association states that sulfonamides are successful in 90 per cent of urinary tract infections, and "... should be tried first."² There are many properties a sulfonamide should possess before it can be claimed to be efficacious and safe. "Thiosulfil,"[®] brand of sulfamethizole, is considered to be one of the "... most acceptable sulfonamides for treatment of urinary tract infections ..."³

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In a long-term clinical study, patients with incurable chronic urinary infections were kept symptom free for as long as five or six years on a maintenance dose of one or two tablets of "Thiosulfil" daily.⁴ In another evaluation, 20 patients were given 25-100 grams of "Thiosulfil" over a period of 20-90 days without incidence of side reactions.⁵ Goodhope⁶ reports that during 30 months of clinical use with "Thiosulfil," no evidence occurred of exanthemata, urticaria, emesis, fever, hematuria and crystaluria.

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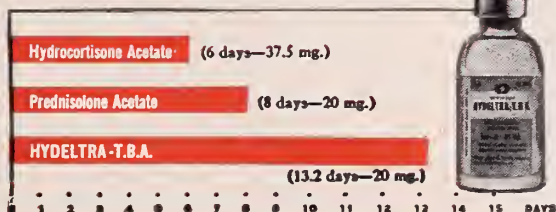
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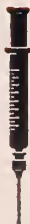
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safe...for your little patients, too

*"a definite relaxant effect"*¹

With NOSTYN "...almost without exception the children responded by becoming more amenable, quieter and less restless."¹

without depression, drowsiness, motor incoordination

"The most striking feature is that this drug does not act as a hypnotic..."¹ "No toxic side-effects were noted, with particular attention being paid to the hematopoietic system."²

dosage: *Children:* 150 mg. (½ tablet) three or four times daily. *Adults:* 150-300 mg. (½ to 1 tablet) three or four times daily.

supplied: 300 mg. scored tablets, bottles of 48 and 500.

(1) Asung, C. L.; Charcowa, A. I., and Villa, A. P.: Sea View Hosp. Bull. 16:80, 1956. (2) Asung, C. L.; Charcowa, A. I., and Villa, A. P.: New York J. Med. 57:1911 (June 1) 1957. (3) Report on Field Screening of Nostyn by 99 Physicians in 1,000 Patients, June, 1956.



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Meat...

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Meat fits well into the moderate-protein, restricted-sodium, acid-ash diet currently recommended for many patients with congestive cardiac failure.¹

The protein of meat—in the proportionate arrangement of its essential amino acids—closely approaches the quantitative proportions needed to promote human tissue synthesis and repair. For this reason lean meat proves important in maintaining positive nitrogen balance without excessive protein intake.

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In addition to these important features, meat contributes other nutritional factors essential in any convalescence—the B vitamins thiamine, riboflavin, niacin, pantothenic acid, B₆, and B₁₂, and the minerals iron, phosphorus, potassium, and magnesium.

1. Odell, W. M.: Nutrition in Cardiovascular Disease, in Wohl, M. C., and Goodhart, R. S.: Modern Nutrition in Health and Disease, Philadelphia, Lea & Febiger, 1955, p. 699.

2. Bills, C. E.; McDonald, F. G.; Niedermeier, W., and Schwartz, M. C.: Sodium and Potassium in Foods and Waters, J. Am. Dietet. A. 25:304 (Apr.) 1949.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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ARALEN[®] *in* RHEUMATOID ARTHRITIS

Extensive studies of rheumatoid arthritis and related collagen diseases—in this country and abroad—have shown the antimalarial Aralen phosphate to be highly effective and well tolerated in a large percentage of patients.

Clinical Results with Aralen in Rheumatoid Arthritis

Author	No. of Cases	Major Improvement	Minor Improvement	No Effect
Haydu ¹	28	22	5	1
Rinehart ²	25	12	4	9
Freedman ³	50	43	3	4
Bagnall ⁴	108	77	12	19
Bruckner ⁵	36	32	0	4
Cohen and Calkins ⁶	22	17	3	2
Scherbel et al. ⁷	25	9	8	8
Total	294	212 (72%)	35 (12%)	47 (16%)

- Success dependent upon persistent treatment
- Often of benefit where other agents have failed
- Remissions on therapy well maintained
- Remission of 3 to 12 months possible even if treatment is interrupted
- Tachyphylaxis not evident

GENERAL EFFECTS:

- Patient feels better
- Patient looks better
- Exercise tolerance increases
- Walking speed and hand grip improves

LABORATORY EFFECTS:

- E. S. R. may fall slowly

ANALGESICS AND STEROIDS:

- Requirements usually reduced or eliminated

JOINT EFFECTS:

- Pain and tenderness relieved
- Mobility increases
- Swellings diminish or disappear
- Muscle strength improves
- Rheumatic nodules may disappear
- Even severe or advanced deformity may improve
- *Active* inflammatory process usually subsides
- Joint effusion may diminish

DOSAGE:

Aralen is cumulative in action and requires four to twelve weeks of administration before therapeutic effect become apparent.

Latest information indicates that an initial daily dose of 250 mg. of Aralen phosphate is preferable to the higher doses sometimes recommended. However, if side effects appear, withdraw Aralen for several days until they subside. Reinstate treatment with 125 mg. daily and, if well tolerated, increase to 250 mg. The usual maintenance dose is 250 mg. daily.

New Chemotherapy

INDICATIONS:

- Rheumatoid arthritis, acute or chronic—with or without adjunctive therapy.
- Spondylitis
- Arthritis associated with lupus erythematosus or psoriasis

HOW SUPPLIED:

Aralen phosphate: 250 mg. tablets in bottles of 100 and 1000.
125 mg. tablets in bottles of 100.

Tolerance:

Aralen is usually well tolerated. Toxic effects are usually mild and to date have been transitory in nature, disappearing completely either on continuance or cessation of therapy or on reduction in dosage.

Gastrointestinal disturbances (e.g. nausea, rarely vomiting, diarrhea, abdominal cramps, anorexia) are frequent manifestations of intolerance. Temporary blurring of vision (due to interference with accommodation) is also relatively frequent.

Pleomorphic skin eruptions (e.g. lichenoid, maculopapular, purpuric), although generally mild, may preclude the use of an optimum dosage schedule. If a skin reaction persists on a reduced dosage schedule, or recurs after reinstitution of treatment with gradually increasing doses, discontinue Aralen till the lesion again disappears and consider resuming treatment with Plaquenil® (brand of hydroxychloroquine).

Less frequently transitory vertigo, headache, lassitude, or neurological disturbances, such as nervousness, irritability, emotional change, and nightmares have been reported. Instances of unexplained slight gradual weight loss as the patient's general health and arthritic condition improved have been mentioned. Occasional instances of bleaching (depigmentation) of the hair have been described.

Although an occasional instance of leukopenia, with normal differential count, has been reported (WBC about 3000), it has not proved troublesome because it has always been reversible on discontinuance, or diminution of the dose. Even spontaneous reversal may occur while full dosage is maintained.

THEORY OF ACTION:

Aralen appears to suppress or induce remission of rheumatoid inflammatory processes by inhibiting adenosinetriphosphatase.

Caution:

Aralen is known to concentrate in the liver and, although hepatic damage has never been reported, the drug should be used with caution in the presence of liver disease. In the presence of severe gastrointestinal, neurological, or blood disorders, the drug should be used with caution or not at all. If such disorders occur during the course of therapy, the drug should be discontinued. Concomitant use of gold or phenylbutazone with Aralen should be avoided because of the tendency of these agents to produce drug dermatitis.

Clinical Comments:

Of fifty patients receiving Aralen therapy, "43 have become really well; that is, they have no stiffness, and any pain that occurs can reasonably be attributed to use of joints affected by secondary degenerative changes. They have no evidence of joint inflammation, but may have a raised erythrocyte sedimentation rate. They have little or no need for analgesics."

Freedman³

"One hundred and twenty-five private patients have been carefully followed clinically and haematologically while receiving well over 200 patient-years of chloroquine [Aralen] therapy. The results are considered good in 70%, one-half of these cases being in remission. Improved work performance, sedimentation rate, and hemoglobin levels paralleled the major objective gain in this 70%. 90% of them remained on chloroquine [Aralen] therapy, half for more than two years. Classical peripheral rheumatoid arthritis, spondylitis, arthritis of juvenile onset, and rheumatoid disease with psoriasis, all appeared to respond about equally well.

"It is suggested that chloroquine comes closer to the ideal for long-term, safe, control of rheumatoid disease than any other agent now available."

Bagnall⁴

"Out of the 36 rheumatoid arthritis cases we treated . . . favorable results were obtained in 32 cases.

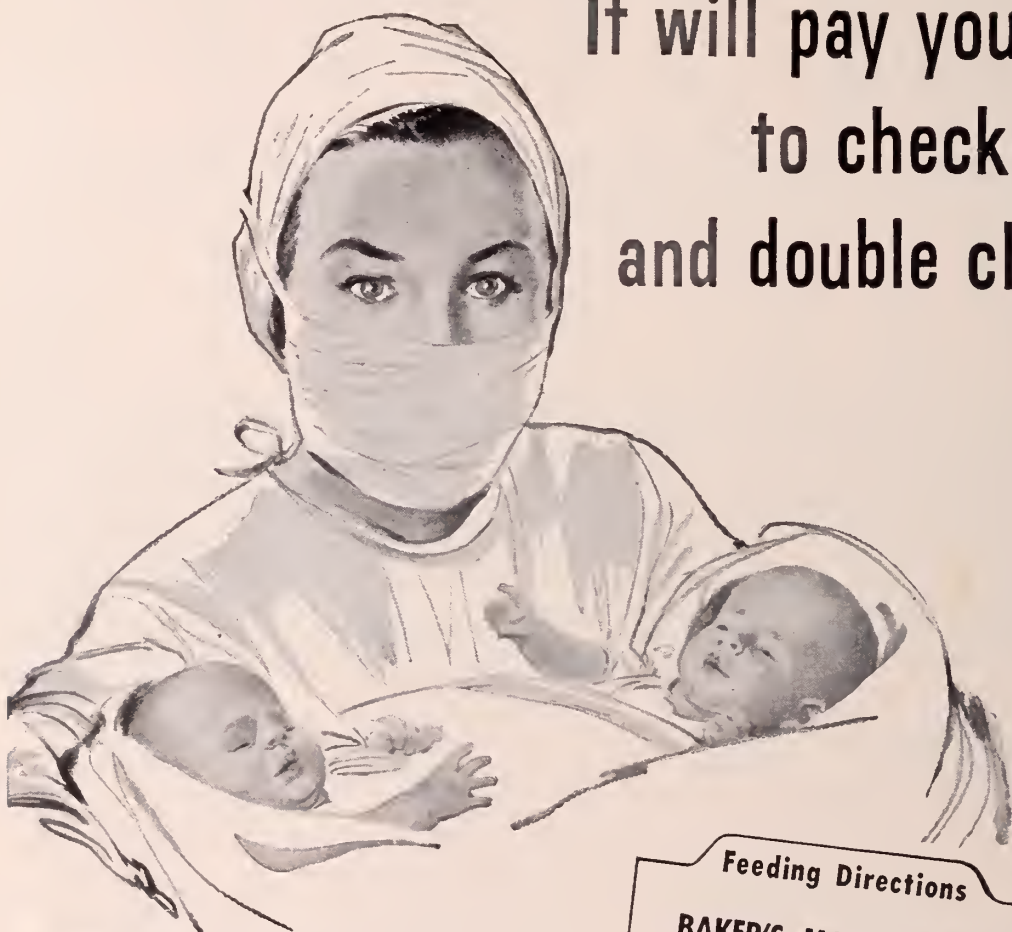
Bruckner et al.⁵

References

1. Haydu, G.G.: Rheumatoid arthritis therapy; a rationale and the use of chloroquine diphosphate, *Am. J. M. Sc.* 225:71, Jan., 1953.
2. Rinehart, R.E.: Chloroquine therapy in rheumatoid arthritis, *Northwest Med.* 54:713, July, 1955.
3. Freedman, A.: Chloroquine and rheumatoid arthritis, a short-term controlled trial, *Ann. Rheum. Dis.* 15:251, Sept., 1956.
4. Bagnall, A.W.: The value of chloroquine in rheumatoid disease, a four year study of continuous therapy, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
5. Bruckner L. and Rosenzweig, S.: Treatment of chronic rheumatoid arthritis with synthetic antimalarials, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
6. Cohen, A.S., and Calkins, Evan: A controlled study of chloroquine as an antirheumatic agent, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
7. Scherbel, A. L., Schuchter, S.L., and Harrison, J.W.: Comparison of effects of two



It will pay you well
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Baker's Modified Milk is a *complete* infant food — contains *all* requirements for complete infant nutrition . . . It is available in two time-saving forms — easy-to-prepare *Baker's Liquid* and *Baker's Powder*, the latter particularly adaptable for prematures and for complemental and supplemental feedings. Both forms are low in cost — less than a penny per ounce of formula.

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DISORDERS—from the mildest
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many patients with **MILD** involvement can be effectively
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many patients with **MODERATELY SEVERE** involvement
can be effectively controlled with

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and **NOW** for patients with
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The first meprobamate-prednisolone therapy

the one antirheumatic, antiarthritic that
simultaneously relieves: (1) muscle spasm
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*"the value of analgesic and tranquilizing agents
should be clearly recognized in the management of [angina]..."¹*

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In pain. Anxious. Fearful. On the road to cardiac invalidism. These are the pathways of angina patients. For fear and pain are inextricably linked in the angina syndrome.

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Dosage and supplied: begin with 1 to 2 yellow tablets (10 mg. PETN plus 10 mg. ATARAX) 3 to 4 times daily. This may be increased for maximal effect by switching to *pink* tablets (20 mg. PETN plus 10 mg. ATARAX). In bottles of 100.

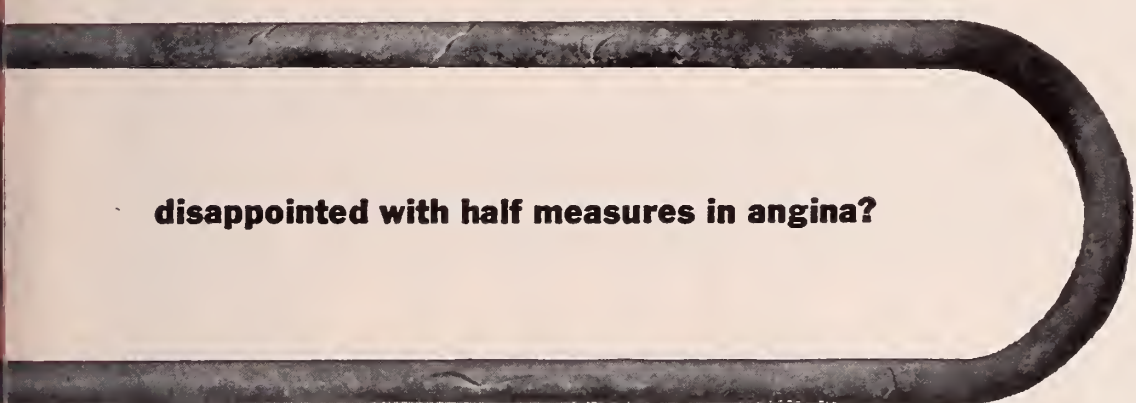
CARTRAX should be taken *before* meals, on a *continuous* dosage schedule. Use with caution in glaucoma.

1. Russek, H. I.: J. Am. Geriat. Soc. 4:877 (Sept.) 1956.

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New York 17, New York



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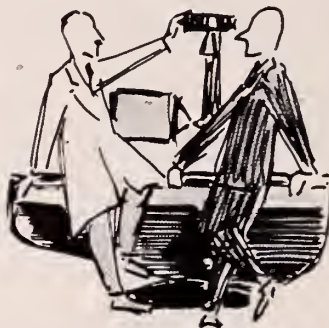
He'd probably tell you first how incredibly easy it is to use (just dial the body part and set its thickness... then press the button). He might sigh with relief at having no charts to consult, no calculations to make (the anatomic principle does all the tedious "figgerin" for you).

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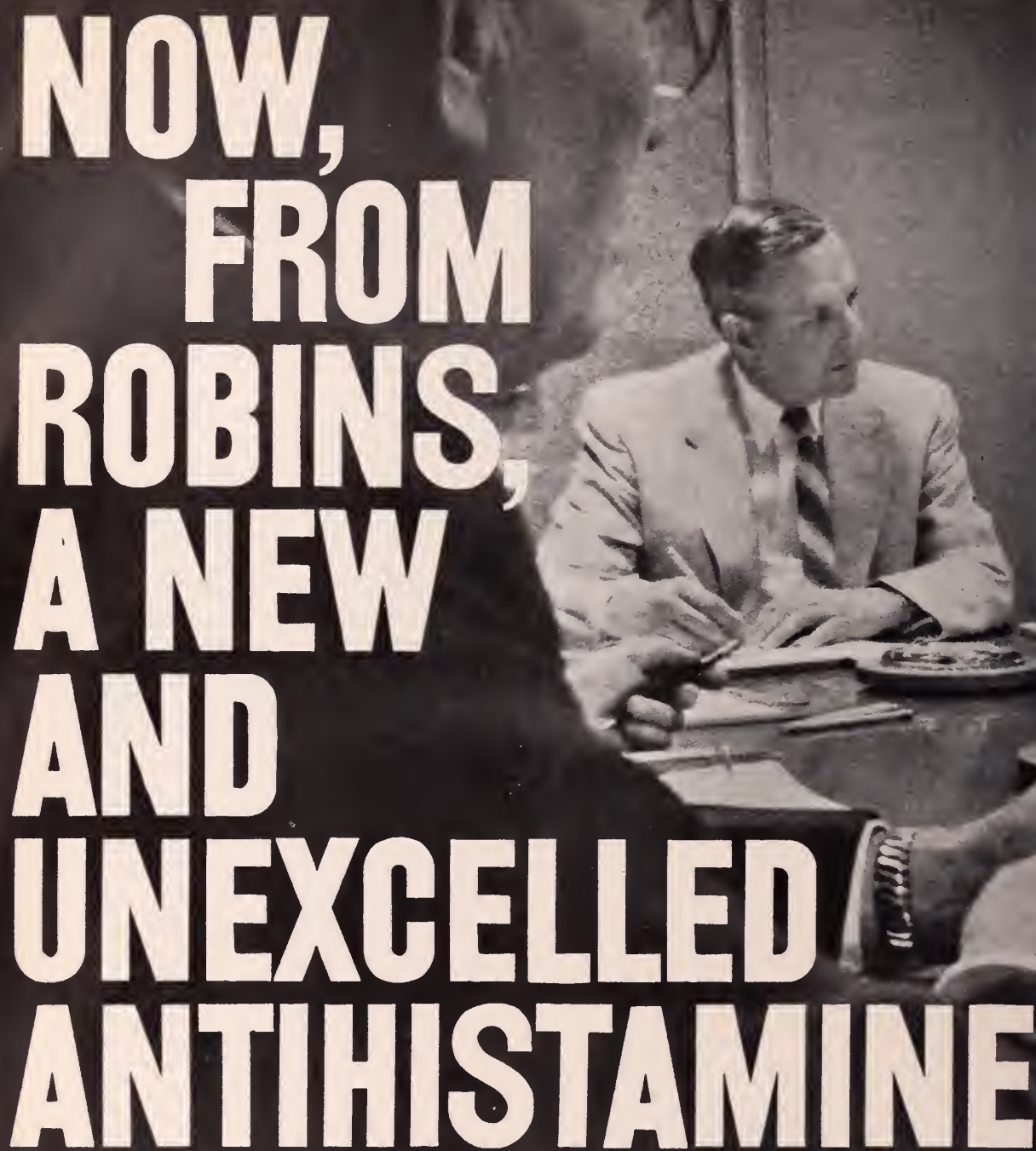
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» **unexcelled antihistaminic action**

Diagnosis	No. of Patients	Response				Side Effects
		Excellent	Good	Fair	Negative	
Allergic rhinitis and vasomotor rhinitis	30	14	9	5	2	Slight Drowsiness (3)
Urticaria and angioneurotic edema	3	1	1	1		Dizzy (1)
Allergic dermatitis	2		1	1		Slight Drowsiness (2)
Bronchial asthma	1		1			
Pruritus	1		1			
Total	37	15	13	7	2	Drowsiness (5) 16.2% Dizzy (1)

From the preliminary Dimetane Extentabs studies of three investigators. Further clinical investigations will be reported as completed.

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a blanket of allergic protection, covering 10-12 hours — with just one **Dimetane Extentab** » DIMETANE Extentabs protect patient for 10-12 hours on one tablet.

Periods of stress can be easily handled with supplementary DIMETANE Tablets or Elixir to obtain maximum coverage.

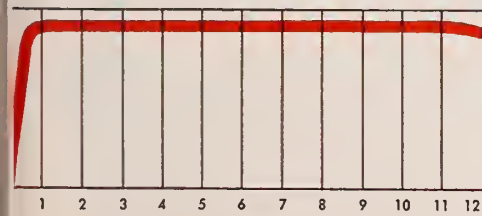
Dosage:

Adults—One or two 4-mg. tabs.
or two to four teaspoonfuls
Elixir, three or four times daily.
One Extentab q. 8-12 h.
or twice daily.
Children over 6—One tab.
or two teaspoonfuls Elixir t.i.d.
or q.i.d., or one Extentab q. 12h.
Children 3-6—½ tab.
or one teaspoonful Elixir t.i.d.



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why wine in digestive disorders?



Although the effects of wine on the digestive system have been discussed for centuries, it has been only in recent years that many of its physiological attributes have been determined.

WINE AND THE SALIVARY GLANDS—The increase in salivary flow following a moderate intake of wine is apparent almost immediately,¹ such increase being attributed to direct sensitization of secretory nerve endings.²

WINE AND GASTRIC SECRETION—With a pH averaging 3.2, wine resembles gastric juice more closely than does any other natural beverage. Its tannins, organic acids and salts of these acids serve as buffering agents to maintain this pH. Relatively low in content of alcohol, table wine has been found to stimulate gastric secretion and induce production of gastric juice high in hydrochloric acid, sodium chloride, rennin and pepsin.³

WINE AND THE DIGESTIVE TRACT—With its low concentration of alcohol, wine in moderate consumption has been found to induce a marked increase in biliary flow.⁴ This, together with increased function of pancreatic enzymes, may thus encourage better digestion of fatty foods.

THEREFORE—IN THE TREATMENT OF DIGESTIVE DISORDERS—Wine is being widely recommended in the treatment of anorexia, hypochlorhydria without gastritis, mucous colitis, spastic constipation and diarrhea, and in digestive disorders stemming from emotional tension and anxiety.

These and other modern R uses for wine are discussed in the brochure "Uses of Wine in Medical Practice." For your free copy write—Wine Advisory Board, 717 Market Street, San Francisco 3, California.

1. Winsor, A. L. and Strongin, E. I.: J. Exper. Psychol. 16:589 (1933).
2. Beazell, J. M., and Ivy, A. C.: Quart. J. Studies on Alc. 1:45 (1940).
3. Foray, G., and Weissenbach, R. J.: Hôpital 25:306 (1937).
4. Okado, S.: J. Physiol. 49:457 (1915).

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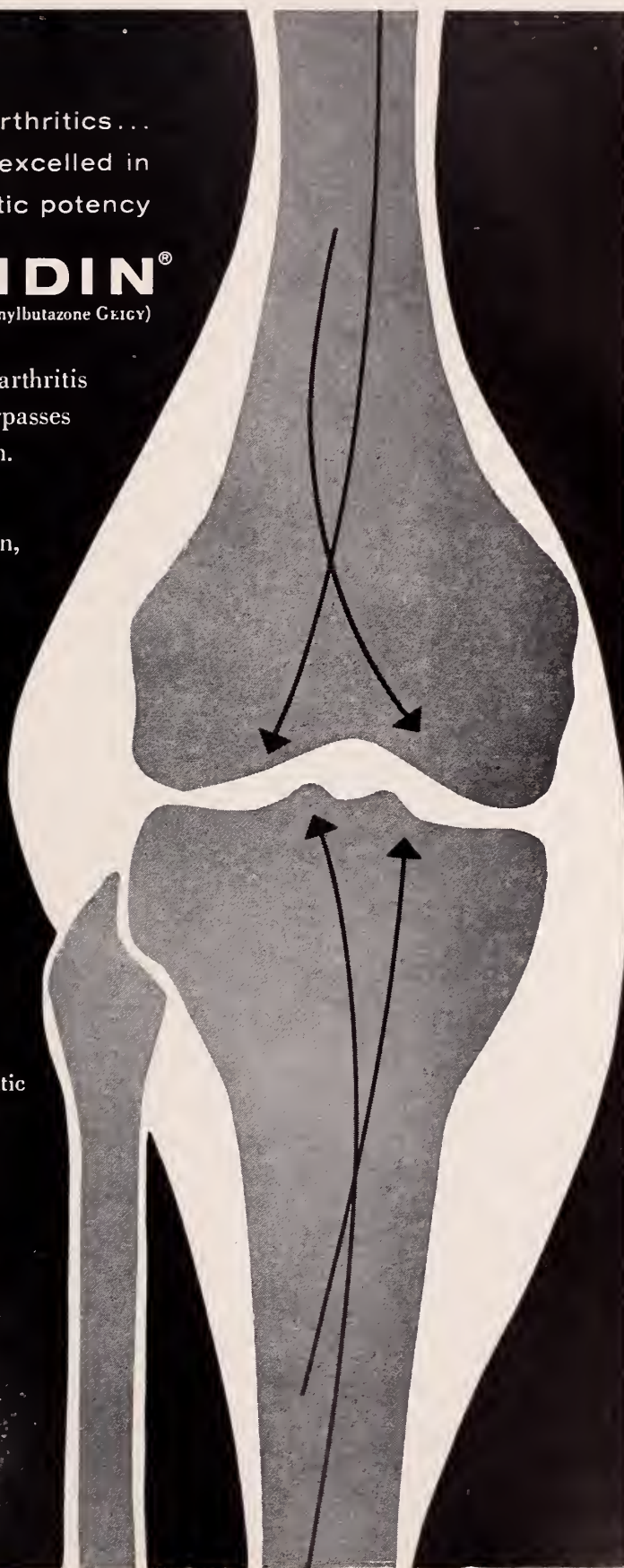
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Flu Fight

Drug Firms Speed U
Vaccine Output, But
Will the U.S. Need

Asiatic Virus Raises Thre
Government Buys, Pr
nd Hens Have to Help

en Attack, Rapid Spr

8 STUDENTS ON FLIGHTS TO U.S. HAVE ASIAN FLU

New York, Aug. 15 (AP) Laboratory tests on e foreign exchange student arrived Aug. 8 show they victims of Asiatic flu, the health department repo today. The eight arrived plane from Europe.

Twenty-nine other stud suffering from influenza rived Tuesday from Rotterdam on the ship Arosa Sky. One, Nicholas Memmos, Greek exchange student, died yesterday. Six of these students were released today the others are to be released tomorrow. It has not been determined whether they died from Asiatic

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THE INFLUENZA

How Deadly Will it Be
What Can We Do about

IF YOU

Answer

A new
—is showing
around the
now have

U.S. Fighting Asiatic

The War On Asiatic Flu

There's cause for concern about Asiatic flu, but scientists and public health officials see no reason for anyone to panic.

First shipments of the vaccine against the new influenza strain have arrived in Chicago, setting off a flood of telephone calls from worried patients to doctors, and from doctors to drug suppliers. This is a normal pattern of mass fear and is understandable.

Even though Salk vaccine priorities were necessary, the regulation produced administrative headaches, public complaints and probably a gray, if not a black market. When regulation is invoked, it would be

PUBLIC HEALTH

Influenza M

➤ INFLUENZA, one of the most predictable of communicable diseases, is going "on cat feet" across the nation now. It has already struck once this in mild epidemic form at an Air Force base in Colorado. When and how severe it will strike again is a perennial ride for public health authorities.

It will probably not lie dormant the rest of the winter months. At the

The War on Mutant A

If Florence was in the grip of an epidemic of colds, coughs and fevers, astrologers . . . declared that it was caused by the influence of an unusual conjunction of planets. This sickness is known as "influenza".

—Chronicles of
1200-1470.

To combat new influenza, a worldwide epidemic this week in response from the Far East. Since the World Health Organization, which collects information from around the globe, specimens of the epidemic. In more than a hundred those of the

Asian Flu: the Outlook

Asian influenza will hit the U.S. this fall before mass immunization can be effective, and the nation faces an epidemic which may strike 15 million to 30 million people. The disease is relatively mild (in no way comparable to the killing "Spanish flu" of 1918-19), and is likely to cause only a small number of deaths among the feeble young and feebled old. But it may compel 10% to 20% of the population in affected areas to take

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complications from


“ORIENTAL FLU”

DEMIC
Causing It?

CATCH “ASIATIC” FLU—

the New Virus Threat From Orient

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STEARATE (Erythromycin Stearate, Abbott)

effective against staph-, strep- and pneumococci

Abbott

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presently used vaccines
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a sudden change to
A virus in 1947, P
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Current Concepts in

Feeding Newborns

Successful infant feeding depends on effective planning of the newborn's nutritional regimen. The first feeding, 12 hours after birth, may consist of a prelacteal solution of KARO® Syrup. This should be offered in one or two ounce amounts at two hour intervals for 24 to 48 hours to fulfill the high water requirement during the first week of life. Breast feeding may be initiated on the second day for five minute intervals to obtain colostrum and stimulate breast secretion. However, the prelacteal feeding is continued thereafter and between nursings.

Artificial feeding is offered on the second day if breast feeding is denied. Small infants are fed at three hour intervals and large infants at four hour intervals. The initial formula usually is a low caloric milk mixture to enable gradual adaptation of the feeding to the infant's tolerance. Concentration of the formula is grad-

ually increased at intervals of several days, in the absence of digestive disturbances. The infant should be fed in a semi-reclining position, burped during and after feeding, and kept on his right side or abdomen undisturbed for an hour.

The same problems of infant feeding recur from generation to generation, but solutions may differ with each era. The carbohydrate requirement for all infants is as completely fulfilled by KARO Syrup today as a generation ago. Whatever the type of milk adapted to the individual infant, KARO Syrup may be added confidently because it is a balanced mixture of low molecular weight sugars, readily miscible, well tolerated, palliative, hypoallergenic, resistant to fermentation in the intestine, easily digestible, readily absorbed and non-laxative. It is readily available in all food stores.

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FORMULA I11 cal./oz. *Whale Milk 8 oz. Water12 oz. Karo1/2 oz. 3 1/2 oz. x 6 q 4h.	FORMULA II13.5 cal./oz. Whale milk 9 oz. Water11 oz. Karo3/4 oz. 3 1/2 oz. x 6 q 4h.
FORMULA I12.5 cal./oz. **Evap. milk 4 oz. Water14 oz. Karo1/2 oz. 3 1/2 oz. x 6 q 4h.	FORMULA II16 cal./oz. Evap. milk 5 oz. Water13 oz. Karo3/4 oz. 3 oz. x 6 q 4h.
FORMULA I11 cal./oz. Dried milk 4 tbsp. Water20 oz. Karo1/2 oz. 3 1/2 oz. x 6 q 4h.	FORMULA II14.5 cal./oz. Dried milk 5 tbsp. Water20 oz. Karo3/4 oz. 3 1/2 oz. x 6 q 4h.
FORMULA III16 cal./oz. Whale milk10 oz. Water19 oz. Karo1 oz. 3 1/2 oz. x 6 q 4h.	
FORMULA III20 cal./oz. Evap. milk 6 oz. Water12 oz. Karo1 oz. 3 oz. x 6 q 4h.	
FORMULA III18 cal./oz. Dried milk 6 tbsp. Water20 oz. Karo1 oz. 3 1/2 oz. x 6 q 4h.	

*Whale lactic acid milk formulas may also be prepared from whale caw's milk.

**Whale lactic acid milk formulas may also be prepared from evaporated caw's milk.

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INCREMIN offers L-Lysine for protein utilization, and essential vitamins noted for outstanding ability to stimulate appetite, overcome anorexia.

Specify INCREMIN in either Drops (cherry flavor) or Tablets (caramel flavor). Same formula. Tablets, highly palatable, may be orally dissolved, chewed, or swallowed. Drops, delicious, may be mixed with milk, milk formula, or other liquid; offered in 15 cc. polyethylene dropper bottle.

Each INCREMIN Tablet
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L-Lysine	300 mg.	Pyridoxine (B ₆)	5 mg.
Vitamin B ₁₂	25 mcgm.	(INCREMIN Drops contain 1% alcohol)	
Thiamine (B ₁)	10 mg.		

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"Eighty-seven patients with various infections of the skin were treated over a period of six weeks with [Signemycin]. Excellent or good results were achieved in sixty-seven, including eleven of twenty-two patients refractory to other antibiotics."

Lewis, H. H.; Frumess, G. M., and Henschel, E. J.: *Rocky Mountain M. J.* 54:806 (Aug.) 1957.

"Results of treatment with oleandomycin-tetracycline of 50 infections [mostly respiratory] due to resistant organisms and 40 infections [respiratory, skin, urinary infections] due to sensitive organisms are very encouraging. In some of these patients, [Signemycin] was lifesaving, and in others surgery was made unnecessary. This confirms other reports."

Shubin, H.: *Antibiotic Med. & Clin. Therapy* 4:174 (March) 1957.

Based on case reports documented by independent investigators in 26 countries abroad, the clinical response obtained with Signemycin in 1404 patients with a wide variety of infections was successful in 1329 patients; in 13 cases only was it necessary to discontinue therapy because of side effects.

Report on 1404 Cases Treated with Signemycin: Medical Department,

Pfizer International. Available on request.

In 50 nonselected patients, Signemycin "...appears to be effective in the treatment of most general surgical infections, including virulent staphylococcus aureus infections. In some cases these infections had been clinically resistant to other antibiotics. The drug is apparently well tolerated."

Levi, W. M., and Kredel, F. E.: *J. South Carolina M. A.* 53:178 (May) 1957.

Of 50 patients with various infectious processes, 26 had not responded to previous antibiotic therapy. With Signemycin "Ninety-six per cent of the mixed infections were clinically controlled. . . . and in none of the cases was there any reason to discontinue the drug."

Winton, S. S., and Chesrow, E.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 55.

Signemycin in 79 patients with severe soft tissue infections: "The average response of these cases was excellent and inflammatory symptoms subsided with almost uniform rapidity....The magnitude and incidence of surgical intervention was reduced....Side reactions were minimal. . . ."

LaCaille, R. A., and Prigot, A.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 67.

Five groups of patients (total 211) with acne were treated with one of five antibiotic agents, including Signemycin (55 cases). "The results were evaluated taking into consideration the usual response to such conservative conventional therapy and the rapidity of response." In 8 weeks, Signemycin rapidly attained and maintained the highest percentage of efficacy of antibiotic agents tried.

Frank, L., and Stritzler, C.: *Antibiotic Med. & Clin. Therapy* 4:419 (July) 1957.

In the treatment of 78 patients with tropical infections, some complicated by multiple bacterial contamination or present for years, Signemycin was found to be "...an exceptionally effective agent," requiring smaller doses and less extended periods of therapy than with the tetracyclines alone, and "caused no notable toxic reactions."

Loughlin, E. H., and Mullin, W. G.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 63.

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Now, with small oral doses of this new and distinctive progestogen, you can produce the clinical effects of injected progesterone. In amenorrheic women for example, "As little as 50 mg. of [NORLUTIN] administered in divided doses over a five-day period was sufficient to induce withdrawal bleeding."¹

CASE SUMMARY²

Amenorrhea of 4 years' duration in a 24-year-old married woman. A course of 10 mg. NORLUTIN twice daily for 5 days was followed after 3 days by menses lasting about 5 days. Since no spontaneous menstruation occurred during the following 35 days, she was given another course of treatment with NORLUTIN, 10 mg. twice daily for 5 days. This was followed by menses.

When this patient was given ethisterone, 40 mg. twice daily for 5 days, no bleeding had ensued when she was seen 41 days later.

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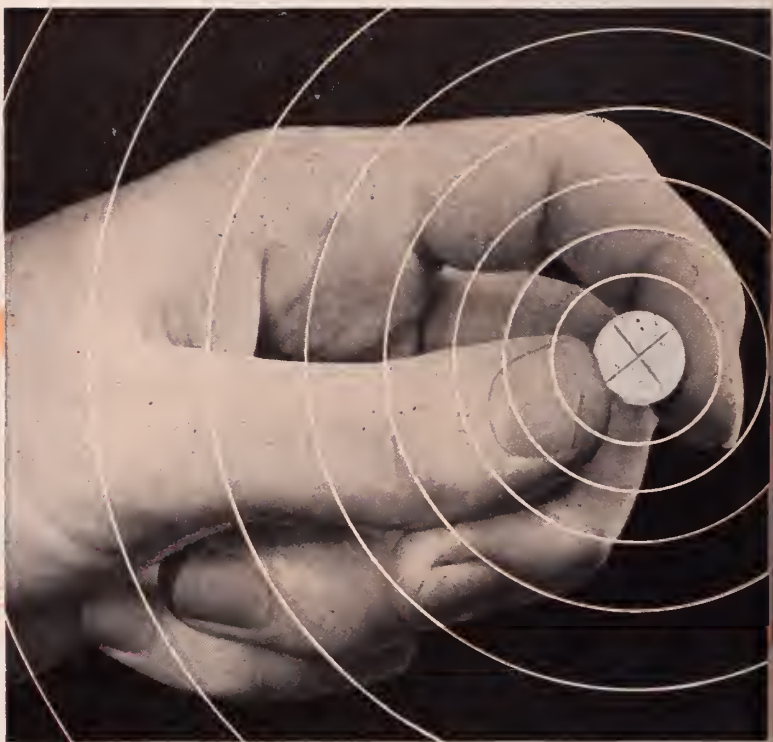
PACKAGING: 5-mg. scored tablets (C. T. No. 882), bottles of 30.

REFERENCES: (1) Greenblatt, R. B.: *J. Clin. Endocrinol.* 16:869, 1956. (2) Hertz, R.; Waite, J. H., & Thomas, L. B.: *Proc. Soc. Exper. Biol. & Med.* 91:418, 1956.



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¹ Nichols, R. L. and Finland, M.: J. Clin. Med. 49:410, 1957.

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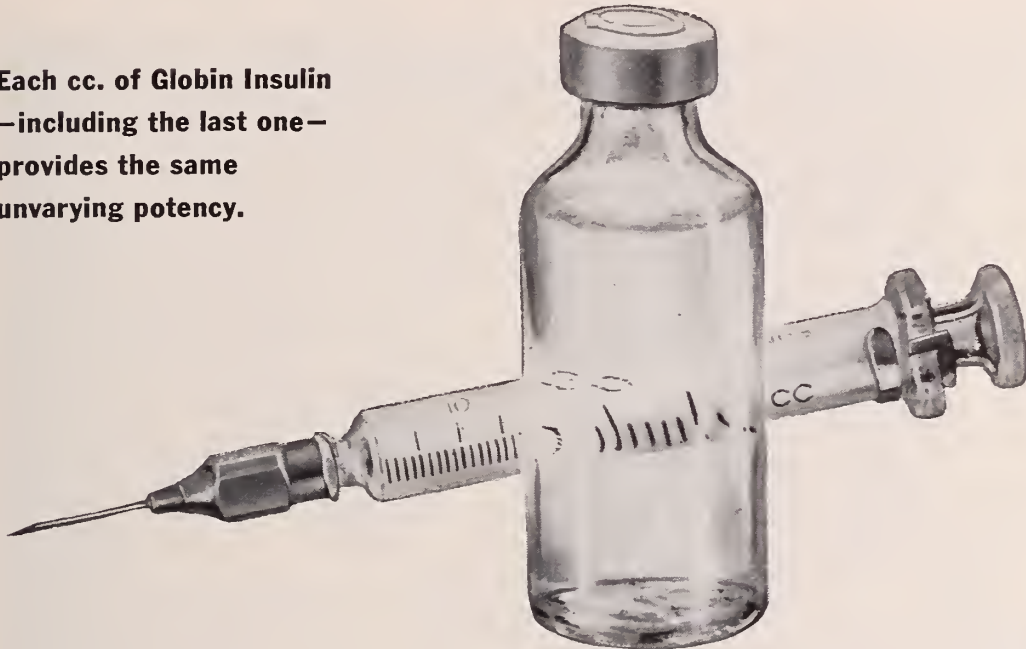
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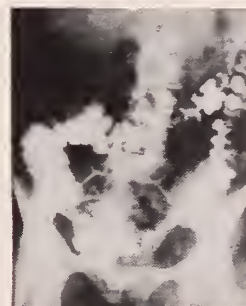
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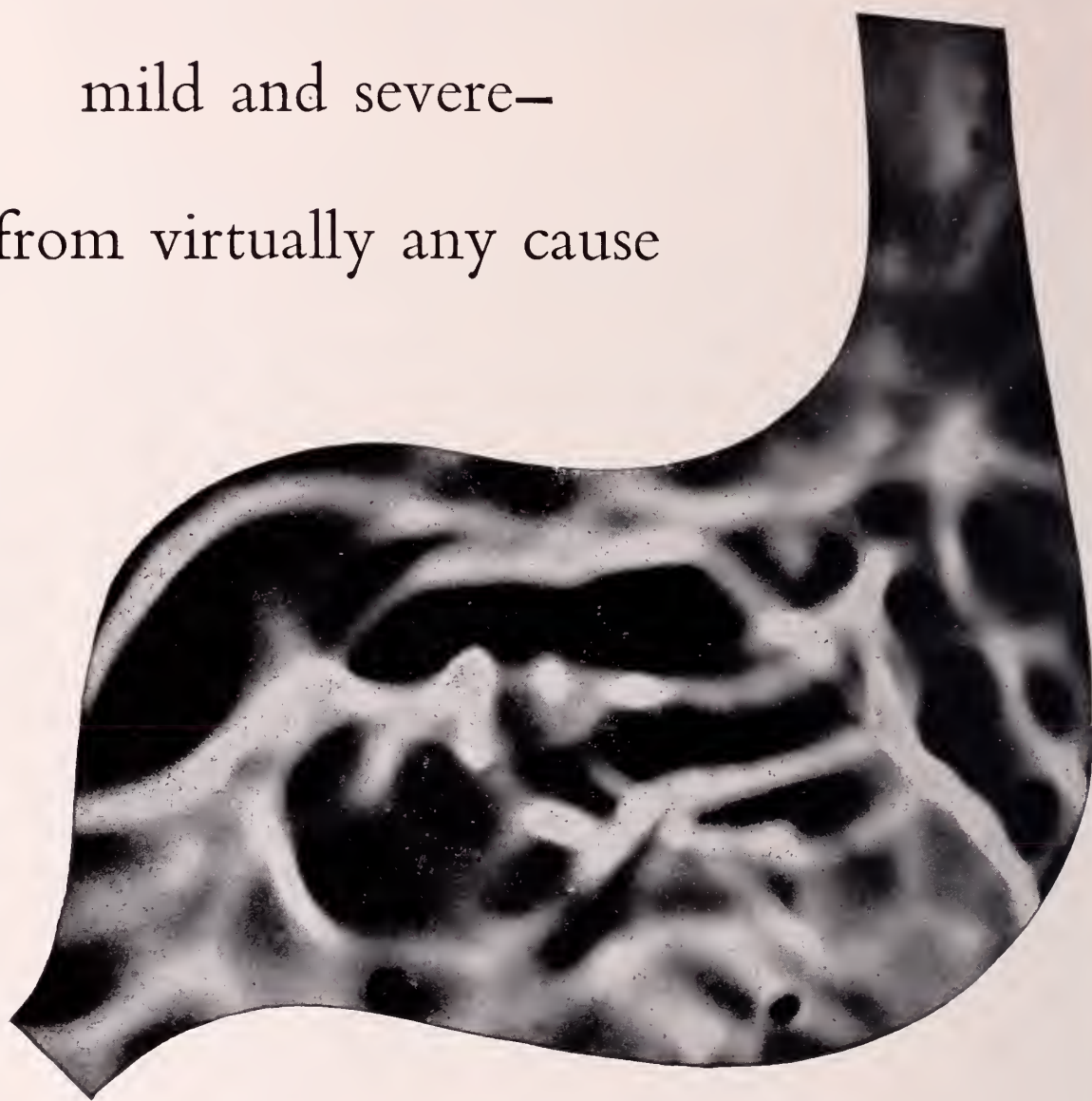
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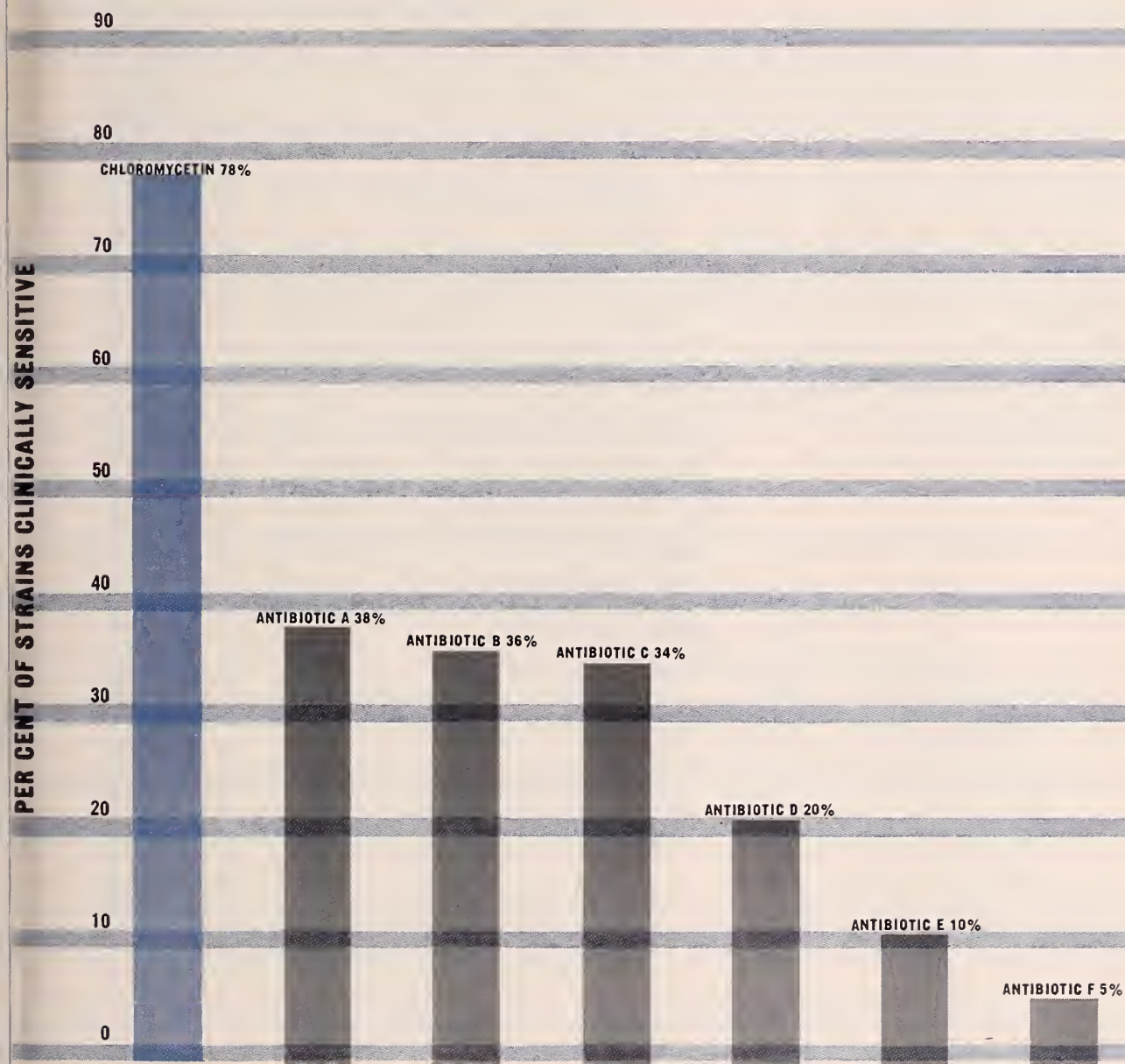
REFERENCES:

- (1) Petersdorf, R. G.; Bennett, I. L., Jr., & Rose, M. C.: *Bull. Johns Hopkins Hosp.* 100:1, 1957. (2) Yow, E. M.: *GP* 15:102, 1957. (3) Altemeier, W. A., in Welch, H., and Marti-Ibanez, F., ed.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 629. (4) Kempe, C. H.: *California Med.* 84:242, 1956. (5) Spink, W. W.: *Ann. New York Acad. Sc.* 65:175, 1956. (6) Rantz, L. A., & Rantz, H. H.: *Arch. Int. Med.* 97:694, 1956. (7) Wise, R. L.; Cranny, C., & Spink, W. W.: *Am. J. Med.* 20:176, 1956. (8) Smith, R. T.; Platou, E. S., & Good, R. A.: *Pediatrics* 17:549, 1956. (9) Royer, A.: Scientific Exhibit, 89th Ann. Conv. Canad. M. A., Quebec City, Quebec, June 11-15, 1956. (10) Bennett, I. L., Jr.: *West Virginia M. J.* 53:55, 1957. (11) Altemeier, W. A.: *Postgrad. Med.* 20:319, 1956. (12) Felix, N. S.: *Pediat. Clin. North America* 3:317, 1956. (13) Metzger, W. I., & Jenkins, C. J., Jr.: *Pediatrics* 18:929, 1956. (14) Woolington, S. S.; Adler, S. J., & Bower, A. G., in Welch, H., and Marti-Ibanez, F., ed.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 365. (15) Waisbren, B. A., & Strelitzer, C. L.: *Arch. Int. Med.* 99:744, 1957.



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*This graph is adapted from Waisbren and Strelitzer.¹⁵ It represents *in vitro* data obtained with clinical material isolated between the years 1951 and 1956. Inhibitory concentrations, ranging from 3 to 25 mcg. per ml., were selected on the basis of usual clinical sensitivity.

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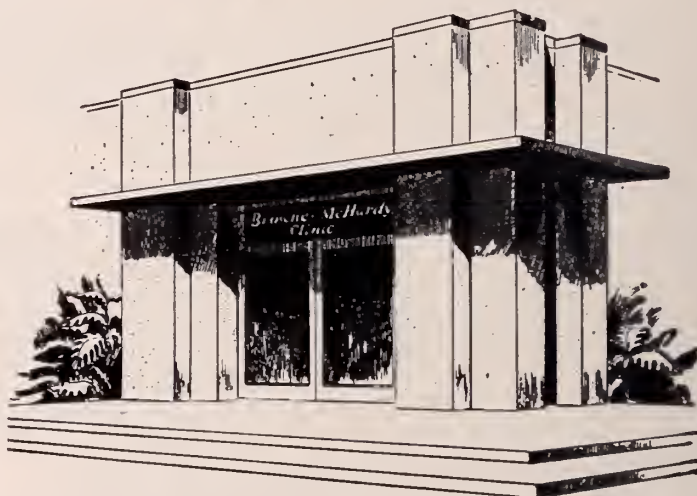
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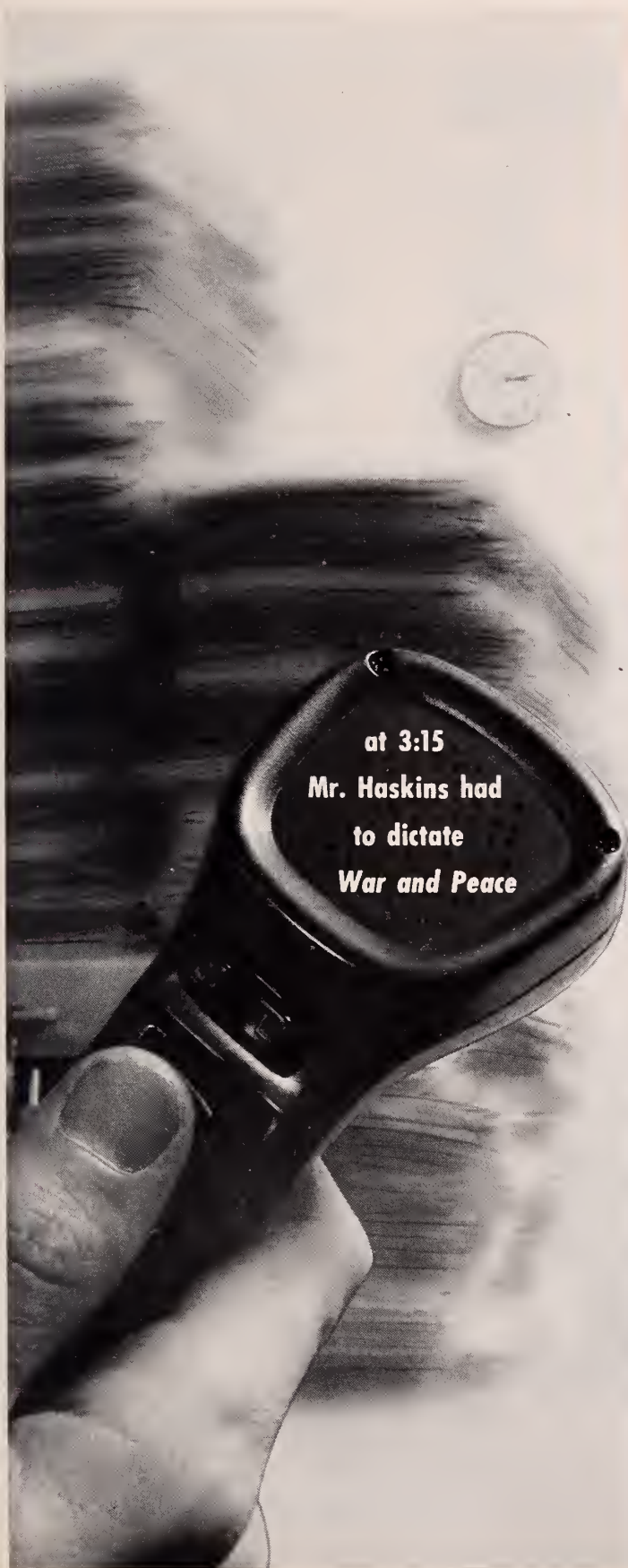
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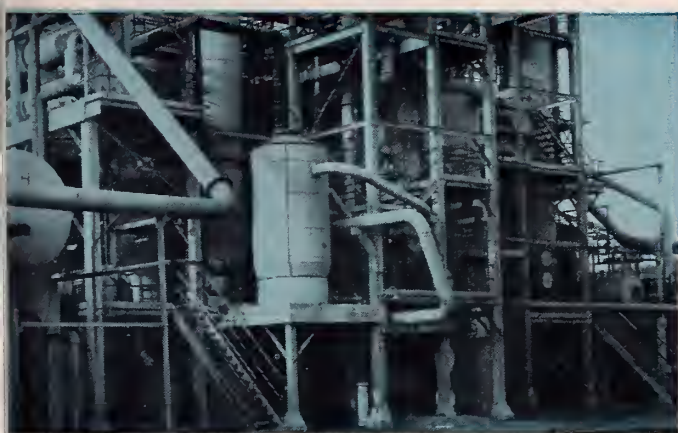
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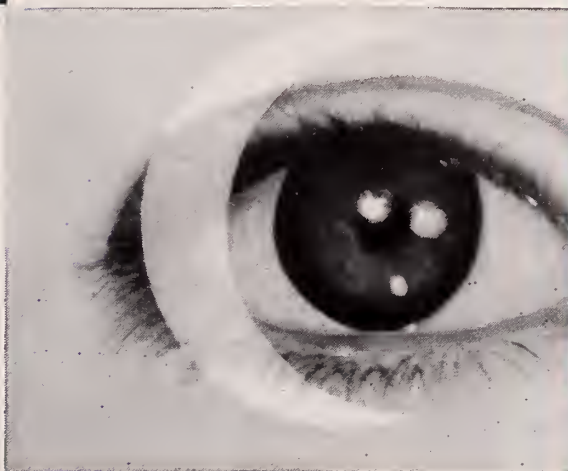
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References

1. King, J. H., Jr.; Passmore, J. W.; Skeeahan, R. A., Jr., and Weimer, J. R.: Tr. Am. Acad. Ophth. 59:759, 1955.
2. Kuhn, H. S.: Tr. Am. Acad. Ophth. 55:431, 1951.

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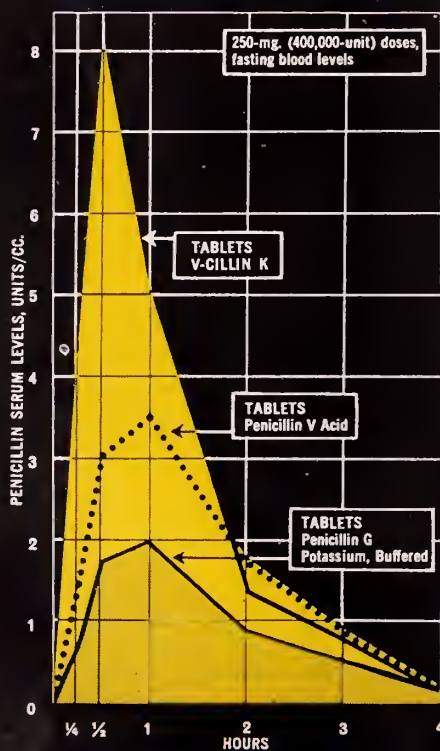
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ASIAN INFLUENZA IN LOUISIANA IN SUMMER OF 1957 *

H. AUBREY WHITE, JR., M. D.

JOHN J. WALSH, M. D.

WILLIAM J. MOGABGAB, M. D.

J. D. MARTIN, M. D.

GEORGE E. BURCH, M. D.

NEW ORLEANS

During April of 1957, many persons in Hong Kong, China, developed the typical clinical picture of influenza. The disease apparently originated in the northern section of China and then spread rapidly throughout the Orient with a reported attack rate of 10 to 20 per cent. The causative agent was identified in May at the Walter Reed Army Institute of Research as a new variant of type A influenza virus, termed Far East influenza A, and popularly designated the Asian strain. Serologic studies in United States military personnel indicated a lack of prior experience with the agent or related strains.¹

The first confirmed case of Asian influenza in the continental United States occurred in June among U. S. Navy personnel in Newport, Rhode Island, followed

by other case reports from California.² It was soon apparent that Louisiana was experiencing an outbreak of epidemic proportions.

In retrospect, the first occurrence of influenza in Louisiana was probably at a boy scout camp near Slidell, Louisiana, during the last week of June. A clinical diagnosis of streptococcal sore throat made on 26 campers was not substantiated by throat cultures. Throat garglings and paired sera were not obtained for virus studies.

On July 14, 45 out of 60 persons attending a church camp near Pollock, Louisiana, became ill with an influenza-like illness. The Asian strain of influenza A virus was isolated from the throat washings of 2 of the sick individuals. Paired sera from 3 others showed a fourfold or greater rise in titre of hemagglutination-inhibition antibody to Asian strain influenza A virus. This outbreak was probably originated by a person who had been exposed to a sick member of a Bossier City, Louisiana, band which had just returned from California.

In mid-July 37 scouts suffered an influenza-like illness while en route by bus to the Boy Scout Jamboree in Pennsylvania. Several had attended the scout camp at Slidell, Louisiana in June. An outbreak involving 100 negro males of the 950 employed in two fish processing factories in Plaquemine Parish, Louisiana, also occurred in the early part of August.

* From the Department of Medicine, Tulane University School of Medicine, Charity Hospital of Louisiana, New Orleans Veterans Administration Hospital and Section on Epidemiology, The Louisiana State Department of Health.

Aided by grants from the Public Health Service (H3615), Upjohn Company, Kalamazoo, Michigan and the Abbott Laboratories, North Chicago, Illinois.

Received for publication September 30, 1957.

The Asian strain of virus was isolated from the throat washings of 1 of these men.

The most widespread outbreak of influenza in Louisiana occurred in Tangipahoa Parish (population 60,000), during the first part of August. A state charity hospital (Lallie Kemp Hospital) serving the area estimated at least 8,000 persons were sick during the first week of August. Later in the month, physicians reported 3,766 additional cases. Asian strain, influenza virus was isolated from 2 of these and 16 others had a fourfold or greater rise in hemagglutination-inhibition antibody titre to Asian strain virus in convalescent sera. The mechanism for the localization of the first large epidemic in Louisiana is not known. Tangipahoa Parish is one of the few places in the United States where public schools are in session during the summer months. The regular vacation period is in the spring in order that children may help with the annual strawberry harvest. The close contact in classes and school buses may have been responsible for the development and spread of the epidemic in this area in the summer. Influenza appeared in the New Orleans area soon afterwards.

This report describes 5 cases of Asian influenza which were studied on the Tulane Medical Service of the Charity Hospital of Louisiana and the New Orleans Veterans Administration Hospital.

MATERIALS AND METHODS

Fifteen patients with a typical clinical syndrome of influenza were admitted during a three day period, August 8 to 11, for detailed study. During this period 11 percent of the 1,518 negro patients who visited the Charity Hospital Admitting Room were diagnosed clinically as having influenza. Concurrently, 7 white patients of 450 (1.5 per cent) were considered to have influenza. The clinical diagnosis of influenza due to the Asian strain of virus was confirmed in the 15 hospitalized patients by virus isolation from throat washings in the chick embryo or monkey kidney cultures³ or by a fourfold or greater

rise in hemagglutination-inhibition antibody titre in convalescent sera.

CASE REPORTS

Patient No. 1—O. B. This 27 year old healthy colored male was awakened about 4 a. m. by nocturia which had not existed previously. Six hours later he began to have a right-sided headache and right lumbar pain followed by a chill and fever. There was no cough, coryza, or history of recent travel or exposure to ill persons.

Physical examination: On admission to Charity Hospital on August 9, 1957, he appeared to be acutely ill. Temperature was 103°; pulse 84; respiration 20; and blood pressure 130/90. There was bilateral injection of the conjunctivae, but there were no inflammatory changes in the nose or pharynx. The neck was supple, the eye grounds were normal and no lymphadenopathy or skin eruption was apparent. A few crepitant rales were

Patient No. 1 O.B.
1-48-311870

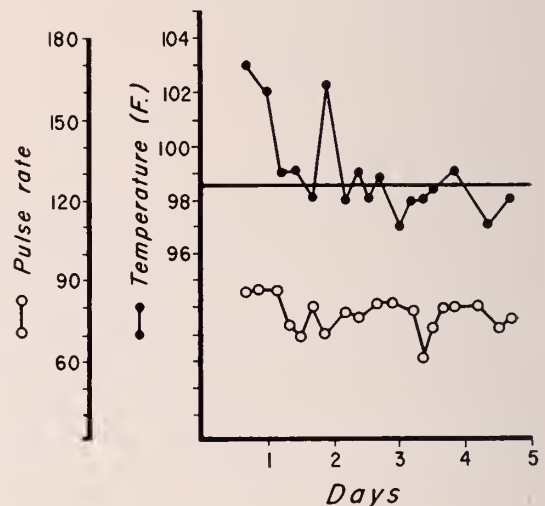


Figure 1

present at both bases which cleared with deep breathing. The heart and abdomen were normal. Rectal, prostatic, and neurological examinations also were normal.

Laboratory Data: WBC 4,700, neutrophils 70%, lymphocytes 28%, eosinophiles 2%, hematocrit 49%. Urinalysis and transaminase were normal; urine and blood cultures were negative; throat culture demonstrated no obvious pathogen or predominant organism. Chest x-ray was normal. The ECG showed inverted T waves in standard leads II and III.

Course in hospitals The patient received symptomatic treatment only. After a brief elevation in temperature on the second day, he became afebrile with disappearance of all symptoms. At the height of his fever a short apical systolic murmur was audible which disappeared on the following day.

The urinary symptoms and mild diastolic hypertension were also present only during the period of fever, and he was entirely asymptomatic at time of discharge. The diagnosis of influenza, Asian strain was made by isolation of virus from throat washings obtained at time of admission. Follow-up examination in two weeks was entirely negative, including the ECG, although the patient complained of leg pains with prolonged walking.

Patient No. 2—W. T., a 25 year old colored male, previously in good health, had sudden onset of fever and generalized weakness while at work. At home he had a severe rigor lasting about five minutes and a frontal headache developed which was intensified with the slightest movement of the head. There was an intense retro-orbital discomfort with eye movement, a nonproductive cough, and dryness of nose with occasional sneezing. He had retrosternal ache after coughing and weakness of the extremities but no definite muscle aches. There were no gastrointestinal or urinary symptoms and no history of exposure to any persons with the same type of illness. He was admitted to Charity Hospital on August 9, 1957.

Physical examination: Examination revealed a well developed, well nourished male, appearing acutely ill sweating profusely, and lying quietly in bed. Blood pressure was 130/70, pulse 100, tem-

Patient No. 2 W.T.
L-44-148857

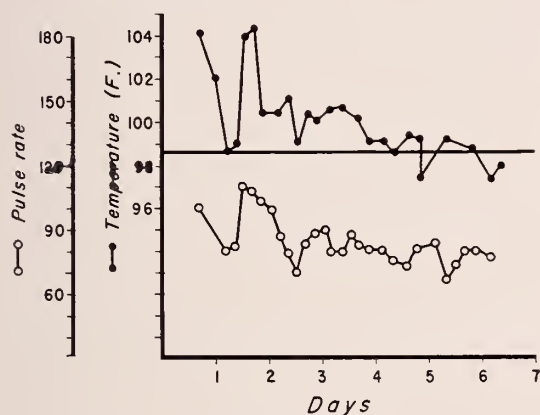


Figure 2

perature 104°, and respiration 27. The conjunctival, nasal, and pharyngeal membranes were injected. Several small petechiae were noted on the soft palate. There were a few transient crepitant rales heard at both lung bases. The heart sounds were normal and there was no lymphadenopathy. The remainder of the physical examination was normal.

Laboratory Data: WBC 10,300, neutrophils 76%, lymphocytes 22%, monocytes 2%, hematocrit 41%. Urinalysis and transaminase were normal; urine and blood cultures were negative; throat culture demonstrated no obvious pathogen

or predominant organism. Chest x-ray and ECG were normal.

Course in hospital: Symptomatic care was administered consisting of bed rest, fluids and codeine. He remained febrile for four days during which time the persistent dry cough greatly aggravated the retrosternal ache. His vital signs remained stable, however. He was asymptomatic when discharged on the sixth day. Throat washings taken on admission were positive for influenza A, Asian strain.

Patient No. 3—L. L. This 40 year old colored nurse's aid was exposed to her 3 year old child who had fever 103.2°, dry cough and conjunctival injection. Two days later, one day before admission, there was a sudden onset of chills, fever, and diffuse pains in the anterior region of the chest, aggravated by breathing. Temperature was 104° and myalgia, arthralgia, and headache were pres-

Patient No. 3 L.L.
L-42-41579

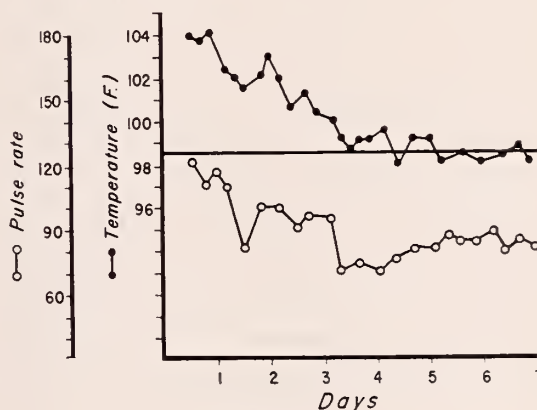


Figure 3

ent. The patient then developed anorexia, vomited once, and had mild continuous nausea but no diarrhea. Lacrimation, mild sore throat, and generalized skeletal muscle weakness were present. Soon after the onset of symptoms she developed a dry cough which greatly aggravated the chest pain. She was admitted to Charity Hospital on August 8, 1957.

Physical examination: The patient was a well-developed, well-nourished female who appeared acutely ill and "toxic". She complained of chest pain, was tachypneic, and had frequent episodes of coughing. Blood pressure was 130/70, pulse 120, temperature 104°, and respiration 28. She was sweating profusely, had a flushed face but no cutaneous eruption. The anterior cervical lymph nodes were tender but not significantly enlarged. All other lymph nodes were normal. The conjunctivae, uvula, and pharynx were injected. Several petechiae were seen on the soft palate. The chest expanded symmetrically with shallow excursions, and was hyperresonant to percussion because the

patient restricted the extent of expiration. A few crepitant rales were heard at both bases posteriorly. The heart, and abdomen were normal. There were no localizing neurological findings, although the tendon reflexes were more active than usual. Generalized skeletal muscle weakness and tenderness were significant findings. The patient appeared mentally normal but was restless.

Laboratory Data: WBC 3,400, neutrophils 76%, lymphocytes 23%, monocytes 1%, hematocrit 37%, sedimentation rate 44 mm. Urinalysis and transaminase were normal; urine and blood cultures were negative; throat culture demonstrated no obvious pathogen or predominant organism. The chest x-ray was normal. ECG showed low T₁ and T in V₄, V₅ and V₆ to be diaphasic or inverted.

Course in hospital: The patient was very uncomfortable due to fever, and substernal chest pain related to respiration. She was treated symptomatically with codeine and sponge baths and became afebrile in five days. During the febrile period blood pressure was normal, whereas the pulse and respirations were accelerated. The tachycardia was out of proportion to the fever and was accentuated by minimal exertion such as sitting upright in bed. This occurred only during the acute phase of the illness. An electrocardiogram recorded during the height of the fever showed T wave abnormalities which improved after recovery. Throat washings obtained on admission were positive for Asian strain of influenza A. She was discharged on the seventh day, asymptomatic except for mild cough on exertion which persisted for another week.

Patient No. 4—E. B., a 31 year old colored male was admitted to the New Orleans Veterans Administration Hospital on August 10, 1957, because of sudden onset of chills, fever, frontal headache,

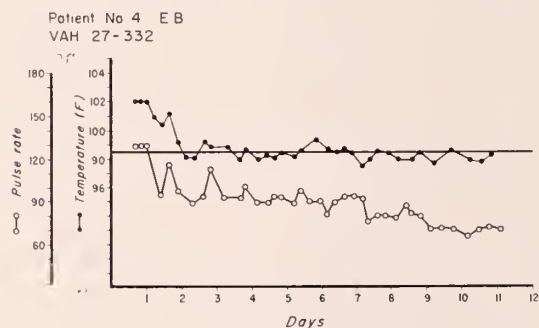


Figure 4

malaise, and weakness of lower extremities of one day's duration. There had been a frontal headache five days prior to admission with mild dysuria for the previous three days. On the day of admission he developed a dry cough, sensation of scratchiness in the throat, but no nausea, vomiting, hematuria, or urinary frequency. The patient was an operating room assistant but had not known of specific exposure to persons with febrile illness.

Physical examination: The patient appeared acutely ill and complained of diffuse muscular aches. Temperature was 102.2°, pulse 120, respiration 22, blood pressure 130/90. There were a few slightly enlarged posterior cervical lymph nodes. The conjunctival and pharyngeal membranes were injected and the nasal turbinates were edematous and mildly inflamed. The lungs were clear and the heart was normal except for a sinus tachycardia. The abdomen was normal but there was mild pain to heavy palpation in the right lumbar region. The prostate was slightly tender.

Laboratory Data: WBC 4,300, neutrophils 43%, lymphocytes 50%, and eosinophils 7%, hematocrit 50%, sedimentation rate 27 mm. Urinalysis and transaminase were normal; urine and blood cultures were negative; throat culture demonstrated no obvious pathogen or predominant organism. Chest x-ray and ECG were normal. The diagnosis was confirmed by a fourfold rise in titre of hemagglutination-inhibition antibody to Asian strain influenza A virus in convalescent serum.

Course in hospital: The patient responded to symptomatic treatment with codeine and atropine, became afebrile in three days and was asymptomatic on discharge.

Patient No. 5—C. O., a 23 year old colored male developed a frontal headache, chills, and fever on the day of admission to New Orleans Veterans Administration Hospital, August 8, 1957. There had been anorexia, malaise, myalgia, and fever for one week. He had had protracted symptoms of an upper respiratory infection for several months,

Patient No 5 C.O.
VAH 27-328

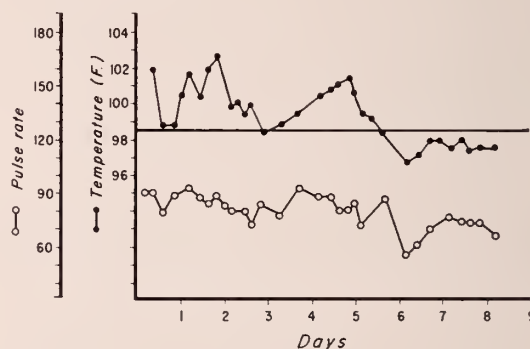


Figure 5

with nasal congestion, rhinorrhea and cough, all of which had become more severe at the time of admission. He had noted a slight darkening of urine and his cough became productive of clear mucus. There was no history of exposure to ill persons.

Physical examination: Blood pressure was 98/60, pulse 90, temperature 102°. The patient appeared acutely ill. The conjunctival, nasal, and pharyngeal membranes were mildly inflamed but without any purulent exudate. The paranasal sinuses were

not tender. Small posterior left cervical lymph nodes were palpable. Heart, lungs, abdomen, rectum and prostate were clinically normal. There was bilateral lumbar tenderness. Neurological examination was normal.

Laboratory Data: WBC 9,400, neutrophils 74%, lymphocytes 20%, monocytes 4%, eosinophils 2%, hematocrit 49%, sedimentation rate 23 mm. Urinalysis and transaminase were normal; urine and blood cultures were negative; throat culture demonstrated no obvious pathogen or predominant organism. Chest x-ray and ECG were normal.

Course in hospital: Therapy was symptomatic. The temperature began to decline on the third day only to rise again to the original level on the fifth day after admission. The cause for this secondary rise in temperature was not apparent and he was asymptomatic except for mild nausea and backache. The leukocyte count at this time was 5,800, neutrophils 57%, lymphocytes 42%, monocytes 1%, hematocrit 49% and sedimentation rate 14 mm. The temperature became normal on the sixth day and the patient was discharged asymptomatic after eight days in the hospital. Influenza A virus, Asian strain was isolated from throat washings collected on the day of admission.

THE CLINICAL SYNDROME

These patients had an abrupt onset of their illness with fever, watery nasal discharge, burning sensation of the conjunctivae, soreness in the pharynx, headache, fatigability and an increase in effort required for physical and mental activity. This was followed rapidly by chilly sensations or rigors, higher fever, cough, myalgia, and pain in the eyeballs. The myalgia involved the back and legs and was severe, requiring aspirin and codeine for relief in 2 of the 5 patients. Weakness, chest pain, nausea, and photophobia were noted, and impairment of mental function with confusion and apprehension were prominent manifestations during the febrile period. Three male patients had dysuria and frequency without urinary tract infection.

All patients appeared seriously and acutely ill at the height of their fever, 102° to 104°, which usually remained at the maximal level for one or two days, and then subsided, returning to normal in about five days. Two of the 5 patients had a diphasic temperature curve, (Figures 1 and 2). Several petechiae were seen on the soft palate of 2 patients. The

pharyngeal, nasal, and conjunctival membranes were injected. The face was flushed and the skin was hot and dry. Three of the 5 patients had cervical lymphadenopathy, 1 anterior and 2 posterior. The lung fields contained transient crepitant rales. The liver and spleen were not palpable. The muscles of the extremities and back were tender. Three patients had leukopenia and 2 had slight leukocytosis. Two patients had abnormal T waves in the electrocardiogram which improved with recovery.

The clinical course was typical of moderately severe influenza with fairly prompt recovery from the toxic manifestations. One patient had diffuse pains in the legs for one week after discharge and one had a nonproductive cough on exertion for several days after leaving the hospital. Complete recovery was rather slow with weakness, fatigability, and sluggishness of mental functions as the chief residual complaints.

Therapy consisted of bed rest, bland and soft diet, aspirin for fever with codeine added for headache and myalgia. Good nursing and close observation for complications were maintained until discharge. None of the 5 patients developed any complications and no antibiotic therapy was employed.

DISCUSSION

These 5 patients presented the classical manifestations of influenza so well described in the standard textbooks of medicine. All of the patients studied displayed maximal degree of illness during the first twenty-four to forty-eight hours. They were obviously extremely ill initially and some patients thought they might die. Impairment of mental function existed to some degree in the more severely ill patients.

Five patients in this area have died, 4 of fulminating pneumonia and 1 with pericarditis. Each patient had clinical manifestations compatible with influenza with cardiopulmonary involvement resulting in the terminal state. The nasal secretions, sera, and tissues of these cases are

under study, and it is believed that death resulted from a bacterial complication of influenza. Serologic evidence strongly suggestive of previous infection by Asian strain influenza virus has been obtained in the pre-mortem sera of 3 of these patients; the diagnosis has been confirmed in the wife of one of these patients. Also, a diagnosis was made clinically and confirmed by rise in titre of hemagglutination-inhibition antibody in the mother of an infant who was dead on arrival at the Lallie Kemp Hospital during the Tangipahoa Parish epidemic.

Careful and prompt bacteriologic study of secretions by means of a stained smear and cultures should be obtained in any patient who presents evidence of a complication or a variation in the course of his illness. Antibiotic therapy of a bacterial complication should be started early, the duration and type as dictated by the clinical course and results of the stained smear until the culture and antibiotic sensitivity report are obtained. The fulminating nature of these complications would indicate the need for large doses of antibiotics.

The greater frequency and severity of the disease in the negro population exemplified by these 5 proven cases and by the high incidence in the Charity Hospital Admitting Room has not been explained.

It would appear from present experiences in Louisiana and past experiences with influenza that the epidemic will spread following opening of schools and the advent of winter, unless an adequate vaccine can be administered to the population in sufficient time. A nationwide epidemic would greatly overburden medical facilities in addition to causing considerable economic losses. Physicians must acquaint themselves with the clinical manifestation of influenza and complications of this illness. Facilities for proper virologic and bacteriologic studies should be available to assist with the special and more complex problems of bacterial complications.

SUMMARY

A study of 5 cases of influenza due to the Asian strain of influenza A virus revealed the disease to be typical of moderately severe classical influenza. In this study the incidence and severity appeared greater in negro patients. All 5 patients recovered quickly from the more acute manifestations but weakness, fatigability, and skeletal muscle soreness persisted for several days.

Five deaths among other suspected cases of influenza yet under study, have apparently resulted from fulminating bacterial complications. Prompt treatment of such complications with large doses of antibiotics is stressed. Uncomplicated cases under careful surveillance require only bed rest, a soft bland diet, and symptomatic therapy.

A continued spread of influenza of nationwide epidemic proportions is anticipated with the opening of schools and the onset of winter.

REFERENCES

1. Meyer, H. M., Jr., and others: New antigenic variant in Far East influenza epidemic, 1957. *Proc. Soc. Exp. Biology & Medicine*, 95:609 (July) 1957.
2. Dauer, C. C.: Epidemiology of Asian Influenza. U. S. Dept. of Health Education and Welfare, National Office of Vital Statistics, State and Territorial Health Officers Conference, U S P H S, Aug. 27, 1957.
3. Mogabgab, W. J., Green, I. J., Dierkhising, O. C., and Phillips, I. A.: Isolation and cytopathogenic effect of influenza B virus in monkey kidney cultures. *Proc. of Soc. Exp. Biology & Medicine*, 89:654, 1955.

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PALLIATION IN CANCER THERAPY*

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SHREVEPORT

"To cure sometimes, to relieve often, to comfort always."

It is a fact, well known to us all, that with the conquest of infectious diseases, with increasing longevity, the treatment of cancer has assumed correspondingly greater significance. "Progress in dealing with the cancer problem must not be measured

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solely by the cure rate, but also by the advances in palliative therapy.”¹¹

This is an important concept. Naturally, we seek a cure, but there are many other chronic diseases which, though not necessarily fatal, are incurable and in which palliative therapy is accepted as the method of management. Palliation is a principle as old as mankind. Certainly the earliest medical records indicate efforts to alleviate the effect of diseases, cancer included. It is a principle we all accept and use without, frequently, clearly defining our objectives or appreciating our accomplishments.

The size of the problem is immediately evident when we recall that, grouping all types of cancer together, the overall cure rate is only 25 per cent. That means that 75 per cent of cancer cases will require some type of palliation in the course of their illnesses. And studies²⁹ have indicated that in these cases needing palliation, in approximately 75 per cent effective and significant palliation can be accomplished. This may vary from simply relief of pain in the terminal phases to definite prolongation of life.

We do not consider mere prolongation of life per se as palliation. To have a patient in the terminal phases of malignancy, and to keep him alive a few days by the use of heroic measures of stimulation, oxygen, infusions, is not palliation in its true sense. Palliation implies keeping a patient comfortable, possibly productive, and certainly responsive to his environment rather than vegetating.

“Postoperative duration of life is not the proper measure of palliation in the care of incurable cancer. Relief of symptoms, freedom from distress, and a sense of well-being far outweigh the importance of the duration of living.”²⁸

We may carry out what we, at the time, consider and hope to be a curative procedure, e.g., a radical mastectomy in a case that is by all evidences clinically curable. Yet if that patient dies ten years later from the effects of that cancer, we are forced to the realization that we actually carried out a palliative procedure which undoubtedly prolonged the patient's life. We cannot forget that curative surgery does not always

cure, but sometimes only palliates, and occasionally what is considered to be a palliative procedure, sometimes effects a cure. None can deny that unpredictable and sometimes unaccountable benefits accrue.

Our prime purposes in palliation are to relieve distress and to rehabilitate to a comfortable and useful life for as long as possible. After all, palliation, in effect, approximates our primary functions as physicians: It is not our job to drive death from the face of the earth, but to prolong life and to make that life more comfortable. These then, are the basic premises of palliative therapy: To prolong life and to relieve symptoms. Or in terminal states, as beautifully expressed by Axel Munthe in “The Story of San Michele”: Our mission is “to help those to die we cannot help to live.” This, I might say, parenthetically, is not to be considered an argument for euthanasia. In all cancer therapy, we reassure according to our hopes, and treat according to our fears.

In cancer therapy, the aims of palliation are met in three ways:

1. By causing temporary regression or cessation of cancer growth.
2. By relieving lethal complications such as intestinal obstruction or disabling complications as pathologic fractures.
3. By physical and mental relief of pain, anorexia, nausea, etc., and supportive treatment to improve the general welfare of the patient.

Disregarding the obvious measures of transfusions, narcotics, nutrition, etc., we find that there are four modalities of therapy useful in cancer palliation:

1. Surgery.
2. Radiation — cytotoxic agents acting by virtue of their physical properties.
3. Chemotherapy—cytotoxic agents acting by virtue of their chemical properties.
4. Hormonal therapy (additive or ablational)—acting as environmental alterants.

Let us analyze each of these, and see where-in it affords palliation.

A. SURGERY

Surgical procedures in palliation aim to

accomplish three things:

1. *Removal of a fungating, painful, or compressing tumor mass.*

Examples are many: Simple mastectomy, nephrectomy, partial thyroidectomy, extremity amputations, wedge resections of intestinal lesions, partial gastrectomy. These procedures are frequently carried out in the face of demonstrable distant metastases for the purpose of removing a disabling, painful, or disfiguring tumor or to prevent complications from its continued growth. A prime example of surgery for palliation is simple mastectomy in a case with known distant metastasis. It has been shown⁸ that in these cases a relatively simple procedure produces subjective and objective improvement with added survival.

2. *Relief of complications:*

Here we include colostomy for intestinal obstruction, gastroenterostomy, gastrostomy or ileostomy to overcome high alimentary tract obstruction, tracheostomy to afford an open airway, craniotomy and laminectomy to relieve pressure, and the treatment of pathologic fractures.

3. *Relief of pain:*

These neurological procedures are effective in making the patient more comfortable and in minimizing the necessity of narcotics and their consequent bad effects. These procedures include rhizotomy, peripheral neurectomy, chordotomy, lobotomy.

4. *Hormonal ablational:*

These are oophorectomy, orchiectomy, adrenalectomy, hypophysectomy.

It is impossible to discuss all of our attainments in each of these fields. The hormonal ablational effects will be discussed in conjunction with hormone therapy. But for purposes of illustration, we will discuss results of surgical palliation in certain specific lesions.

The statistical approach to the evaluation of surgery in palliation is fraught with many difficulties. There are no controls; there is no standardization of staging permitting a fair comparison of different procedures in similar malignancies, and surgical abilities and techniques differ markedly. Despite these obvious facts

which make any statistical evaluation difficult, one may be justified in attempting such a study in order to gain an impression, at least, of the relative value of certain palliative operations. We are reminded of E. D. Churchill's comment: "Opinions and impressions are plentiful and cheap . . . facts are rare and precious."

1. Partial gastrectomy in incurable pyloric cancer.

Our experience at the Confederate Memorial Medical Center in the palliation of incurable gastric carcinoma is somewhat similar to that reported by Pack and McNeer.²⁸ In a series of 100 cases of gastric carcinoma collected³⁶ in the years 1940-1954, it was found that following palliative partial gastric resection there was an average postoperative duration of life of seventeen months as compared to the procedure of gastroenterostomy and gastrostomy in which all patients were dead within six months. Obviously, palliative resection was carried out in generally more favorable cases than the other two procedures. Nevertheless, it is the general consensus that the best palliation for gastric carcinoma is removal of the primary lesion if at all possible. The operative mortality in our series of palliative resections was 5.4 per cent. This mortality should not mitigate against advocacy of palliative gastric resection.

Of a total of 70 gastric resections done in the Confederate Memorial Medical Center over the stated period of time 52 per cent were palliative. In a group of 58 colon resections done between 1940-50⁵ 34 per cent were palliative.

2. Palliative surgery in carcinoma of the head of the pancreas.

Cancer of the pancreas is about as incurable a disease as any to which man is heir, either due to difficulties in early detection or the problems in surgical extirpation. Yet the patient is not to be abandoned therapeutically, for studies indicate that there is a definite prolongation of life by palliative procedures and in those cases with obstructive jaundice, the patient is more comfortable after his jaundice is relieved by a by-pass procedure.

In a collected report by Clifton,⁹ he found that the average survival after diagnosis of carcinoma of the pancreas, without treatment, ranged from three to ten weeks. Those cases having palliative radiation, survived an average of eight months. Those having palliative by-pass procedure survived 5.4 to 13.9 months, while those undergoing excisional surgery survived 10.5 to 25.8 months. Obviously, in the first group were the more advanced cases, in the last, those in which a cure was sought. But the cure rate is so infinitesimal that for all practical purposes, palliation was all that could be expected and apparently to some degree this aim was realized. Obviously though, the more extensive procedure has a much higher mortality which might encourage one to approach the problem of palliation with a less formidable surgical procedure.

There are certain other surgical procedures which have been advanced for supposedly giving a higher cure rate in certain malignancies. But because of the distressingly low improvement in cure rate in most of these, and the questionable palliation afforded, they are debatable procedures. Such are:

1. Multiple organ excision and pelvic eventration where the lesion has extended to adjacent organs.
2. Total gastrectomy.
3. Quarterectomy for extremity malignancies.

The surgeon carrying out these procedures is often like the man who marries for a second time: It is triumph of hope over experience.

B. RADIATION THERAPY

Radiation therapy has been available for many years, but in recent years we have seen the development of many improvements in methods and newer sources. Methods thus far are of four types:

1. *External ionizing radiation:*
 - a. X-rays from 50,000 to 3,000,000 volts
 - b. Radium
 - c. Radio-isotopes, e.g., Co^{60} , Ce^{137}
 - d. Electron, proton, neutron beams

2. *Intracavitary radiation*
 - a. Radium or radon
 - b. Radio-isotopes, e.g., Co^{60} , P^{32} , Na^{24} , Au^{198}
3. *Interstitial radiation*
 - a. Radium, radon
 - b. Co^{60}
 - c. Au^{198}
4. *Internal or parenteral irradiation*
 - a. P^{32} , I^{131} , Na^{24} , Au^{198}

In general, it may be said that the newer methods of irradiation have not yet been demonstrated to increase the cure rate, but they have been a valuable addition to palliative therapy. To give certain examples: The use of the cross-fire technique and cobalt beam therapy has permitted regressive doses of x-ray to internal malignancies, with less systemic and local discomfort to the patient. While not apparently increasing the cure rate, it has the palliative value of making the patient less uncomfortable from radiation complications.

Au^{198} has had beneficial effect, albeit, temporary, in ascites, pleural effusions.

I^{131} , with or without preliminary thyroidectomy, has been of value in treatment of some metastatic lesions of thyroid cancer, and occasionally of the primary lesion, and perhaps in prolonging life. However, it should be remembered that less than 50 per cent of thyroid cancers will concentrate a significant amount of I^{131} . Fewer than 25 per cent of papillary adenocarcinomas (the most frequent type) will retain I^{131} . More malignant forms concentrate very poorly. Questionable palliation in breast cancer with P^{32} (and testosterone) has been reported. X-radiation in pathological fractures is of proven benefit.

There can be no doubt that radiation therapy can cure certain accessible lesions as of the skin, breast, and cervix; that the purposes of palliation, i.e., prolongation of life and relief of disabling symptoms can be afforded in certain selected and suitable lesions, and that with improvements in technique and newer methods, even further palliative and perhaps curative results may be forthcoming. Radiation, too, has its dangers: pulmonary fibrosis, depression of

bone marrow, necrosis and skin irritation, ureteral blockage.

C. CHEMOTHERAPY

Perhaps the most promising of all the newer methods of cancer therapy have been in the field of chemotherapy. Certainly it is the field in which the ultimate "break through" in the control of cancer is expected. No chemotherapeutic agent has yet been demonstrated to have cured any patient of cancer. However, such substances may relieve symptoms, reduce periods of hospitalization, prolong life, and increase probability of cure by other means. The effect of these various chemicals on cancer has been partly discovered by accident, partly as the result of definite and specific research. They work in various ways, but none, as yet, has been found that meets the ultimate: interferences or destruction of cancer cell growth without adversely affecting normal cells. There are five types of drugs now in general use. So far, none is curative; their greatest benefit has been in palliation of certain lymphomas and leukemias.

However, the use of chemotherapeutic agents in the prophylaxis against metastasis at the time of surgery opens an intriguing field. Cole and associates¹⁴ have shown experimentally that injection of tumor cells and certain chemicals at the same time reduces markedly the development of metastatic lesions. They are trying it clinically in primary operable lesions on the breast, colon, rectum, and stomach, using the drugs (HN_2 and TESPA), locally and intravenously immediately following and for three days postoperatively, in the hopes of destroying cancer cells in transit.

1. Nitrogen mustard-type compounds:

a. Nitrogen mustard (NN_2)

It probably acts at the point of metabolism of nucleic acid, causing mitotic inhibition. This drug has given definite remissions and palliation in the following conditions:

- (1) *Hodgkin's disease*: 80 per cent show remission at some time or other. It does not increase longevity, but will cause decrease in fever, relief of pain, reduction in size of tumors,

and will apparently convert an acute fulminating Hodgkin's to the chronic phase.

- (2) *Lymphosarcomas*: There is a similar response as in Hodgkin's; life expectancy is not increased but makes life more bearable. Some types e.g., reticulum-cell respond poorly.
- (3) *Leukemia*: HN_2 is of no value in acute leukemia; it is of moderate value in chronic myeloid and lymphoid leukemia: it is unpredictable in its effects.
- (4) *Bronchogenic carcinoma*: There has been sufficient benefit here to make it of definite value in palliation. The more anaplastic the carcinoma, the better the results. 75 per cent of incurable bronchogenic carcinomas show remission of symptoms lasting from two weeks to two months with alleviation of cough, pain, dyspnea, hemoptysis.
- (5) *Metastatic carcinoma*: HN_2 sometimes gives temporary relief in breast, ovary, uterine, gastric malignancies, seminoma, chorio-epithelioma. Its effect is sporadic and unpredictable.

b. Triethylene melamine (TEM)

It is a nitrogen mustard-like compound and closely resembles HN_2 in its therapeutic and toxic effects. Its main advantage is that it is effective when given by mouth and there is less nausea and vomiting. It is as effective in some cases as HN_2 and because of less toxicity can sometimes permit continuation of therapy and thus prolong remissions.

c. Triethylene phosphoramidate (TEPA)

and d. Triethylene thiophosphoramidate (TESPA)

Both have similar actions but TESPA is less toxic and better tolerated. Therefore, TESPA is used more frequently. It may be used intravenously, intramuscularly, interstitially, intracavitarily. Variable palliation is given in breast and ovarian carcinoma and in chronic lymphatic and myeloid leukemia.

2. Urethane:

Thirty-five per cent of *multiple myeloma* cases are favorably affected, but it is not known that it increases longevity. It causes remission in *chronic leukemias* and is more effective in chronic myeloid leukemia, but is no better than x-ray or P³².

3. Folic acid antagonists (aminopterin and A-methopterin)

Its use is predicated on the fact that folic acid is essential for cell metabolism. It is best in *acute leukemia*: One-third show good response. Remissions are temporary but have extended survival time of those who have responded up to twelve months.

4. Compound 6—mercaptapurine:

It is a purine antagonist and is of value in *acute myeloid leukemia*. Remissions are temporary, lasting two to eight months.

5. Myleran (GT-41)

This is a sulfonic acid ester and can cause marked depression of granulopoiesis. It does not appreciably affect the lymphatic system. Its principal use is in *chronic myelogenous leukemia*. Remissions become increasingly shorter, but it can cause definite remissions up to a year's duration.

D. HORMONAL THERAPY (ADDITIVE AND ABLATIONAL)

One of the most fruitful fields of cancer palliation has been the use of hormonal therapy, either as an additive procedure, or by ablation of certain of the endocrine glands. Hormones act as regulators of growth processes and modifiers of cellular enzymatic actions. The fact that we can, even temporarily, favorably affect the course of a malignancy is stimulating and promising of yet greater knowledge and accomplishments to come.

To date, palliation by hormones, specifically the sex steroids, estrogens and androgens, has, not surprisingly, been most effective in sex-linked organs and in particular the prostate and breast. Since principal accomplishments have been in these two organs, we will confine our remarks to them.

1. Prostate:

Most cases of carcinoma of the prostate when first seen usually have progressed to

the stage of being surgically incurable, i.e., they have extended beyond the prostatic capsule. The value of estrogen therapy and/or orchiectomy in producing prolonged remissions in prostatic cancer has been one of the most valuable of palliative procedures. Some have even suggested that by use of these palliative measures, a previously surgically incurable lesion can be converted into a surgically curable one.^{10, 35} Prostatic cancer has been controlled by palliative measures for five years and more. In the presence of bony metastasis, it takes five to six months to see satisfactory regression.

In a study by Pool and Thompson³¹ they found in a collected series of 1560 cases of prostatic carcinoma, all treated with TUR but in which estrogens were administered in a group of 649, that there was a 12.1 per cent greater five-year survival rate in the estrogen treated group. Since after removal of the sources of androgen (orchiectomy) and anti-androgen therapy (estrogens), the adrenals are capable of compensating and producing androgens in significant amounts, failure of further palliation after orchiectomy and estrogen therapy can be combated for three to nine months further by bilateral adrenalectomy. Hypophysectomy causes some palliation but its value remains to be determined.

2. Breast:

Confining our remarks to the female breast, effective and real palliation in surgically incurable breast cancer has been afforded through:

- (1) Local surgery
- (2) Irradiation—x-ray—radium—P³², Au¹⁹⁸
- (3) Chemotherapy
- (4) Hormonal therapy
 - a. Ablational
 - b. Additive

We have already touched upon the use of surgery, irradiation, and chemotherapy in palliation of breast cancer. In recent years, the hormone approach has been intensely studied by a group-study sponsored by the A.M.A. Committee on Research. That study was recently concluded after work of about 30 groups, of which we were for-

tunate in being one. Let us then summarize the current views concerning hormone therapy in palliation of female breast cancer.

Ablational hormonal therapy: The earliest linking of hormones and cancer therapeutically was in cancer of the breast. Beatson,⁴ in 1896, reported on the beneficial effects of oophorectomy in the palliation of extended breast cancer. In 1905, Lett²² collected 99 cases, 46 per cent showing a favorable response. Treves and associates³⁷ at Memorial Hospital have shown that 44 per cent of premenopausal women have subjective and objective improvement, lasting from eleven months to two to three years. Only 12 per cent favorable response was noted in postmenopausal women. That surgical castration is more effective than radiation castration is indicated by 18 per cent further response in the cases oophorectomized following radiation of the ovaries. There can be no question but that in premenopausal women, who have recurrence or generalized extension of their breast cancer, the most effective method of palliation is initially bilateral oophorectomy.

There has been increasing evidence suggesting that oophorectomy should be part of the primary treatment in premenopausal women with operable breast cancer, concomitant or immediately following radical mastectomy. Horsley²¹ has reported increased five-year survival in 9 to 12 per cent of such cases, and Treves, from Memorial, has similarly found the combined procedures to increase five-year survival (10 to 20 per cent). Here is, again, partially a question of philosophy: Treat cancer of the breast piecemeal, or hit it with all we have initially. We have, for several years, routinely elected to do bilateral oophorectomy at the time of the initial treatment, but it is too early to evaluate our results.

It is apparent that there are two types of breast cancer, not predictable by histologic or other methods at present: one is apparently estrogen dependent, the other not. The only way, thus far, to distinguish the two is by the effect of oophorectomy or

estrogens. Those that are estrogen dependent are the ones responding favorably to oophorectomy. After removal of the ovaries, the adrenals compensate and secrete estrogens. In those who have responded to oophorectomy and then begin to regress, further regression in 42 per cent for a nine months' period can be expected by bilateral adrenalectomy. Similar response can be expected from hypophysectomy (surgical or irradiation). Some favor hypophysectomy to adrenalectomy because of the easier postoperative control. In postmenopausal women who have had recurrence of their cancer, around 60 per cent objective improvement lasting from nine to ten months has been observed following combined bilateral oophorectomy and adrenalectomy. "Medical" adrenalectomy, i.e. suppression of adrenals with cortisone, has not been as effective as adrenalectomy. Objective remission has occurred in only 15 per cent of cases.

Additive hormonal therapy: Both estrogens and androgens have been valuable adjuncts in the palliation of breast cancer. This mode of action is unknown, but may be due, as suggested by Nathanson, to hormonal or suppressive hypophysectomy.

Estrogen therapy: Estrogen therapy is the more effective of the two types of steroid therapy (i.e. estrogens and androgens) but since it can often accelerate the disease in the presence of functioning ovaries, it is reserved for women who are six years clinically postmenopausal or six months or more surgically postmenopausal. It is equally effective as androgens in bony metastasis and twice as effective in soft tissue metastasis. It takes two to three months to effect palliation and effective palliation can be produced in 30 per cent of cases for periods of six months up to several years.

Androgen therapy: This is not as effective as estrogen therapy, but can be used in premenopausal women safely. It affords something less than 30 per cent palliation and the period of palliation seems somewhat shorter.

SUMMARY AND CONCLUSIONS

1. The over-all cure rate in all types of

cancer is 25 per cent; 75 per cent will require palliative treatment at some time in the course of their disease.

2. Effective and real palliation can be had in about 75 per cent of those requiring it.

3. Advances in palliation are an important aspect in cancer management; the cure rate is not the only index of progress in this field.

4. The purposes of palliation, in effect, approximate our primary function as physicians: We do not expect to banish death from the earth, but only to prolong life and to make that life more comfortable.

5. The purposes of palliation are accomplished by (a) temporary regression or cessation of tumor growth, (b) relief of disabling or lethal complications, (c) giving symptomatic relief.

6. In addition to general supportive measures, effective palliation can be afforded in selected cases by (a) surgery, (b) radiation, (c) chemotherapy, (d) hormonal therapy.

7. Surgery and radiation are curative as well as palliative modalities. Chemotherapy and hormonal therapy are palliative in selected cases, but so far neither has proven of curative value.

8. Surgery and radiation therapy are effective in a wide range of malignancies. Chemotherapy is principally of value in the lymphomas and leukemias. Hormonal therapy is principally of value in prostate and breast malignancies.

REFERENCES

1. Aldrich, E. M. et al.: Carcinoma of the breast; results of surgical treatment, *Am. Surgeon* 145:799, 1957.
2. Alpine, S. G.: Nitrogen mustard in treatment of bronchial carcinoma, *Brit. M. J.* 4:1412, 1956.
3. Anglem, T. J. and Bradford, M. L.: The prognosis of major surgery for cancer in the aged, *Cancer* 7:988, 1954.
4. Beatson, G. T.: On the treatment of inoperable cases of carcinoma of the mamma, *Lancet* 2:104, 1896.
5. Boggs, Jr., H. W.: Statistical analysis of carcinoma of the colon 1940-1950. Unpublished data.
6. Bridges, T. J.: Present Status of Hypophysectomy in the Palliation of Prostate Cancer, Third National Cancer Conference Proceedings p 297, J. B. Lippincott, Philadelphia, 1956.
7. Brunschwig, A.: Radical pancreatoduodenectomy for cancer of the head of the pancreas, *Cancer* 9:1160, 1956.
8. Byrd, Jr., B. F. and Stephenson, S. E.: Simple mastectomy for cancer of the breast, *Am. Surgeon* 145:807, 1957.
9. Clifton, E. E.: Carcinoma of the pancreas, *Am. J. Med.*, 21:760, 1956.
10. Colston, J. A. C. and Brendler, H.: Endocrine therapy in carcinoma of the prostate, *J.A.M.A.* 134:848, 1947.
11. Copeland, M. M.: The palliative care of inoperable and incurable recrudescant neoplasms, *J. Chronic Dis.*, 4:186, 1956.
12. Copping, G. A.: The management of advanced malignancy, *Canad. M. A. J.* 76:319, 1957.
13. Craver, L. F.: Recent advances in treatment of inoperable cancer, *Bull. New York Acad. Med.* 28:385, 1952.
14. Cruz, E. P., McDonald, G. O. and Cole, W. H.: Prophylactic treatment of cancer, *Surgery* 40:291, 1956.
15. Dao, T. L-Y: Present status of adrenalectomy in the palliation of the metastatic carcinoma of the prostate Third National Cancer Conference Proceedings p 292, J. B. Lippincott, Philadelphia, 1956.
16. Daland, E. M.: Palliative treatment of the patient with advanced cancer, *J.A.M.A.* 136:391, 1948.
17. Gavey, C. J., and others: Discussion on palliation in cancer, *J. Am. Geriatrics Soc.* 4:963, 1956.
18. Goodman, L. S. and Gilman, A.: *The Pharmacologic Basis of Therapeutics*, The MacMillan Co., N. Y., 1955.
19. Gordon, R. A., Campbell, M.: The use of chlorpromazine in intractable pain associated with terminal carcinoma, *Canad. M. A. J.* 75:420, 1956.
20. Harvey, H. D., Titherington, J. B., Stout, A. P. and St. John, F. B.: Gastric carcinoma: Experience from 1916 to 1949 and present concepts, *Cancer* 4:717, 1951.
21. Horsley, G. W. and Gianoullis, J. T.: Carcinoma of the breast, *Virginia M. Month.* 84:12, 1957.
22. Lett, H.: An analysis of 99 cases of inoperable carcinoma of the breast treated by oophorectomy, *Lancet*, 1:227, 1905.
23. Lewison, E. F., et al.: Advanced mammary cancer treated with sex hormones, *J.A.M.A.* 162:1429, 1956.
24. MacDonald, I. and Guiss, L. W.: Clinical Symposium: Palliative management of carcinoma, *California Med.* 69:144, 1948.
25. Moore, G. E.: Surgical therapy of gastric cancer, *New York J. Med.*, 56:1295, 1956.
26. Ochsner, A. and Blalock, J.: Carcinoma of the stomach; necessity for reevaluation of therapeutic philosophy, *J.A.M.A.* 151:1337, 1953.
27. Olson, K. B.: Treatment of Advanced Cancer, *New York J. Med.* 56:1295, 1956.
28. Paek, G. T. and McNeer, G.: Palliative operations for gastric cancer, *Rev. Gastroenterol.* 16:291, 1949.
29. Payne, J. T.: Surgery as palliation in the terminal malignant patient, *Am. Surgeon*, 19:324, 1953.
30. Pearson, O. H.: Present Status of Adrenalectomy and Hypophysectomy in the Treatment of Advanced Breast Cancer, Third National Cancer Conference Proceedings p 277, J. B. Lippincott, Philadelphia, 1956.
31. Pool, T. L. and Thompson, G. J.: Conservative Treatment of Carcinoma of the Prostate, Collected Papers of the Mayo Clinic 47:260, 1955.
32. Prohaska, J. V., Nelsen, T. S. and Evans, S. O.: Radical Surgery in Advanced Carcinoma of Intra-abdominal Organs, *A.M.A. Arch. Surg.* 73:671, 1956.
33. Rohn, R. J. and Bond, W. H.: Some indications for the use of chemotherapy in neoplastic disorders, *J. Indiana M. A.* 50:417, 1957.
34. Stout, A. P.: Tumors of the Stomach, Atlas of Tumor Pathology, Section VI—Fascicle 21, Armed Forces Institute of Pathology, 1953.
35. Sullivan, J. J., Hartwig, C. H.: Use of estrogen therapy preliminary to radical perineal prostateseminal vesiculectomy in carcinoma of the prostate, *J. Urol.* 70:499, 1953.
36. Thomas, H. L.: Statistical Analysis of 100 Cases of Carcinoma of the Stomach, Unpublished data.
37. Treves, N. and Finkberner Jr.: Quoted by H. T. Randall—Palliative Treatment of Metastatic Breast Cancer by Oophorectomy and Adrenalectomy, Current Surgical Management, W. B. Saunders, Philadelphia, 1957.

THE PRESENT STATUS OF THE TREATMENT OF DISEASED BLOOD VESSELS BY REPLACEMENT *

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NEW ORLEANS

Within the past decade a variety of vascular substitutes have been developed for replacing segments of the aorta and peripheral arteries. Homografts have been utilized extensively with considerable success and both early and late results indicate that homologous arteries, whether fresh, preserved by refrigeration or by freeze-drying, are satisfactory arterial replacements.³ Recent observations of atherosclerotic changes in aortic homografts one or two years after transplantation suggest that these grafts may undergo degenerative changes with time,¹ but additional studies are needed to support these observations.

Because of the difficulty in procuring arterial homografts experimental and clinical trials of heterologous grafts have been recorded. The rapid degeneration of these transplants, however, indicates that they are entirely unsatisfactory for arterial replacement.

In view of the difficulties associated with homografts, vascular prostheses made of synthetic materials have been extensively studied. To date, nylon, dacron, orlon, and teflon appear to be most satisfactory for arterial substitutes. Porous and nonporous materials appear to function equally well in the aorta. For peripheral vessels, however, the crimped nylon tube developed by Edwards and Tapp⁶ has proven most effective. Recent modifications of this type of crimped nylon tubing have been made available which incorporate bifurcations. This has extended the range of their usefulness enormously. With increasing experience in the use

of these nylon prostheses they are found to be satisfactory substitutes in a variety of aneurysmal and occlusive diseases at all levels of the arterial system. At the present time the only sites where homografts have a distinct advantage is at the levels of elaborate branching, particularly the aortic arch and the upper abdominal aorta. Crimped nylon tubes are now employed by preference for peripheral arteries, the lower abdominal aorta, the descending thoracic aorta, and the ascending aorta. Morphologic studies up to two years after transplantation fail to reveal degenerative changes in synthetic arterial substitutes.

The indications for use of arterial replacement have rapidly increased to the point that practically every segment of the aorta and major peripheral arteries has been successfully replaced. This report is concerned with a brief review of the indications and general principles underlying the use of arterial substitutes in the treatment of acquired diseases of the arterial system.

Aneurysms and atherosclerotic occlusive disease are the two most common acquired diseases of the aorta. Unless treated, these conditions are associated with progressively severe symptoms, and in a significant number of cases result in fatal complications. In the case of aneurysms, death occurs usually from rupture and hemorrhage, the average duration of life after diagnosis being about one to two years. Thrombotic occlusion of the aorta and peripheral arteries runs a more protracted course but the final complications of arterial insufficiency may lead to death.

Dissecting aneurysm of the aorta is a relatively common condition which is rapidly fatal in about 90 per cent of cases unless treatment is instituted early.

Traumatic rupture of the thoracic aorta is occurring with increasing frequency as a result of the increase in automobile accidents. This condition may not be immediately fatal and recent experience indicates that sufficient time may elapse between injury and fatal hemorrhage to

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permit operative treatment.

ANEURYSMS OF THE AORTA

Aortic aneurysms may be sacciform or fusiform in shape and result from atherosclerosis, syphilis, or trauma. As a rule sacciform aneurysms are due to syphilis, the characteristic pathologic feature being a destruction of the elastic tissue with weakening of the wall. If the destructive process is localized the dilatation may involve only a portion of the circumference of the aorta. In many instances the resulting saccular aneurysm has a small neck. This type of aneurysm is most commonly found in the thoracic aorta, in the ascending portion and the aortic arch (Figure 1). Symptoms may not appear until

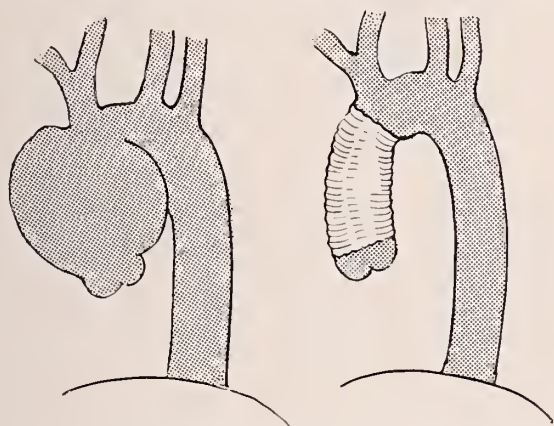


Figure 1.—Diagram showing a fusiform aneurysm of the ascending aorta which was resected using extracorporeal circulation and replaced with a crimped nylon tube.

late and usually are a result of compression of adjacent structures often with erosion into vertebral bodies, trachea, or esophagus.

The characteristic pathologic feature of a narrow neck at the site of origin of these lesions makes possible the removal of the aneurysm by occlusion of the neck and excision followed by repair of the aortic wall. Thus this can be accomplished in most instances without encroaching upon the aortic lumen.

Fusiform aneurysms involve the entire circumference of the aorta. Generally, fusiform aneurysms of the thoracic aorta are syphilitic or traumatic in origin while those involving the abdominal aorta are

due to atherosclerosis. Another interesting feature of these lesions is that aneurysms of atherosclerotic origin almost invariably involve the portion of the aorta below the renal arteries. As in the case of sacciform aneurysms, these lesions produce symptoms by pressure on adjacent structures with back pain being a common feature. This is often mistaken for conditions involving the intervertebral disks or lesions of the skeletal system.

Regardless of their location, fusiform aneurysms are best treated by complete excision and replacement with an arterial substitute. Since it is necessary to interrupt blood supply to several organs during operation the technic employed depends upon the location of the aneurysm. For instance, in aneurysms of the ascending aorta and aortic arch, it is necessary to maintain blood flow to the central nervous system during the period of aortic occlusion. This can be readily accomplished by use of temporary bypass shunts or by utilizing a mechanical heart-lung bypass. The former procedure is especially useful when the aneurysm does not involve the ascending aorta and there is sufficient aortic wall above the valve to implant a shunt. However, should the aneurysm arise in the ascending aorta, the most practical technic consists of the use of a mechanical heart-lung bypass. In this procedure blood is removed from the superior and inferior venae cavae, pumped through a mechanical oxygenator, and then returned to the common carotid arteries and to one of the femoral arteries. Thus, adequate blood flow to the brain and to structures below the aortic arch is maintained. When aneurysms involve the descending thoracic aorta, ischemic damage to the spinal cord may result from occlusion of this portion of the aorta (Figure 2). Therefore, it is necessary to either reduce the metabolism of the spinal cord by reducing the temperature or use temporary bypass shunts. General body hypothermia has been widely employed and is a relatively safe and effective technic for this purpose. It is now recognized that

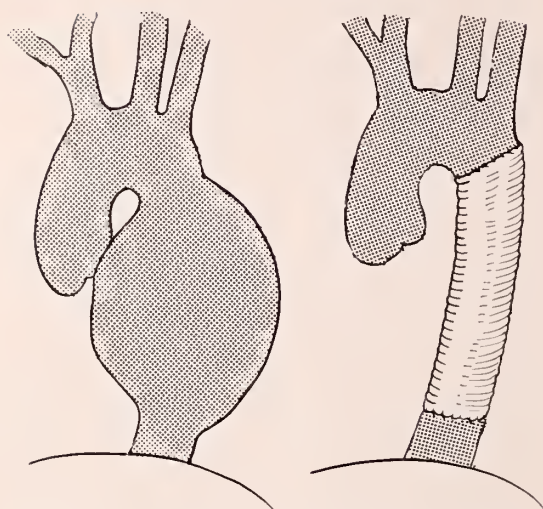


Figure 2.—Diagram showing fusiform aneurysm of the descending thoracic aorta which was resected under hypothermia and replaced with a nylon graft.

the temperature need not be reduced to extremely low levels but only to about 80° to 90° F. Temporary bypass shunts are also quite effective in preventing ischemic damage to the spinal cord and have certain advantages over general body hypothermia. These shunts may extend from the left atrium of the heart through a pump and into a femoral artery, or from the left subclavian artery to the left femoral artery. In either technic, the thoracic aorta may be cross-clamped as long as ninety minutes with assurance that the spinal cord and kidneys are receiving adequate blood flow.

Fusiform aneurysms involving the abdominal aorta below the renal arteries are less of a problem since the aorta in this area may be occluded for as long as two hours without producing ischemia to the distal tissues. Thus, aneurysms in this location may be resected with relative ease and replaced with some type of arterial substitute.

LOWER THORACIC AND UPPER ABDOMINAL ANEURYSMS

One of the most difficult aneurysms to treat effectively is that involving the lower thoracic and upper abdominal portions of the aorta (Figure 3). This is true because the vital visceral branches of the aorta arise from these segments. There-

fore, in resecting aneurysms in this area it is necessary to employ temporary bypass shunts in order to minimize the period of interruption of blood flow through the celiac, superior mesenteric, and renal arteries. Increasing experience has indicated, however, that with the use of shunts interruption of blood flow to these

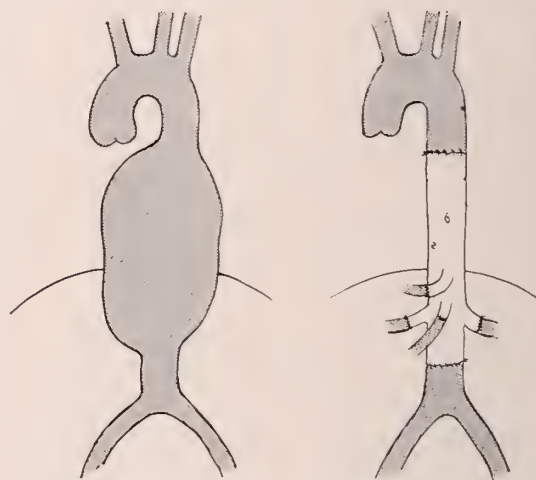


Figure 3.—Diagram showing an aneurysm of the lower thoracic and upper abdominal portions of the aorta with involvement of the celiac, superior mesenteric and renal arteries. The aneurysm was resected using a temporary bypass shunt and the defect bridged with a homograft with restoration of continuity of the involved visceral branches.

organs can be reduced to a safe level with only minimal, temporary interference with function.⁵

RUPTURED ANEURYSMS

Rupture of an abdominal aneurysm represents a catastrophe, yet because of the pathologic anatomy of abdominal aneurysms it is frequently not immediately fatal. Thus, rupture does not usually take place as a sudden event because of the retroperitoneal position of the aneurysm and the characteristic lamination of the thrombus attached to its wall. The clinical manifestations consist of onset of abdominal pain, tenderness over the aneurysm or in the flanks, and a moderate reduction in blood pressure. In some instances, compression of one or both ureters may produce symptoms suggestive of ureteral calculi. In many cases symptoms will abate after the initial episode but

rupture then occurs hours or days later. In the presence of an abdominal aneurysm, the symptoms described above should suggest the diagnosis and treatment should be instituted promptly. Operation consists of removal of the ruptured aneurysm and replacement with a suitable substitute.

The extremely poor natural prognosis of aneurysms of the aorta makes operation imperative unless the patient's condition contraindicates it. In an experience consisting of more than 300 cases, the mortality of patients without significant cardiopulmonary or renal disease is about 10 per cent.

DISSECTING ANEURYSM

The term "dissecting aneurysm" is often a misnomer since the actual diameter of the aorta may not be increased. The diagnosis can usually be established from the clinical manifestations alone which consist of sudden onset of severe excruciating pain beginning in the chest and radiating peripherally into the upper extremities or into the abdomen and lower extremities. In most instances symptoms are suggestive of coronary occlusion but a negative electrocardiogram helps to rule out this condition. The dissecting process usually begins in the thoracic aorta just above the aortic valve or just distal to the left subclavian artery and may extend as far distally as the popliteal arteries.

The etiology of the condition is not clear but in most instances there is degeneration of the medial coat and the patients are usually moderately to severely hypertensive. Only about 10 per cent of patients survive the acute dissecting process and then only because the dissection ruptures back into the true aortic lumen. This has been referred to as a "healed" dissecting aneurysm. The remainder of these cases terminate by rupture through the adventitia and then into adjacent structures such as the pericardial sac, mediastinum, or pleural cavities.

Recently, technics for the treatment of dissecting aneurysms have been developed which are based upon nature's method of healing this lesion.² Thus, when there is

simple dissection of the aortic wall without aneurysm formation and the process begins in the ascending aorta, treatment consists in creating a window in the dissected portion of the wall a short distance below the origin of the left subclavian artery to provide a re-entry passage to the true aortic lumen. When the dissecting process begins at the left subclavian artery and the aortic wall is dilated, this segment of aorta is resected using either hypothermia or a bypass shunt. The dissected passage distally is then obliterated by sutures and the excised portion of aorta is replaced with an arterial substitute. The operative mortality is about 20 per cent but this compares favorably with the natural mortality of this disease of 90 per cent.

ANEURYSMS OF PERIPHERAL ARTERIES

Although aneurysms most commonly involve the aorta, their occurrence in peripheral arteries is not infrequent. In most instances peripheral aneurysms are a result of atherosclerosis or trauma. The most common sites for the former are the femoral artery in the region of the inguinal ligament and the popliteal artery. Rarely do arteriosclerotic aneurysms occur in the vessels of the upper extremities. Traumatic aneurysms may occur at the site of any penetrating arterial wound. These lesions may be confined solely to the artery or may involve both artery and vein with a communicating arteriovenous fistula. Peripheral aneurysms are best treated by total excision and replacement with a vascular substitute. The results are eminently satisfactory and, in the case of arteriovenous aneurysms, have rendered obsolete the procedure of quadruple ligation and excision without restoration of continuity of the artery.

OCCLUSIVE DISEASE

Atherosclerotic, thrombotic occlusions characteristically involve the abdominal aorta near its bifurcation and the vessels distal to this site. The occlusive process may be partial or complete and in most instances is segmental. As a rule, partial occlusion of the aortic bifurcation is asso-

ciated with involvement of the vessels of the lower extremities as well; whereas, in complete aortic occlusion (Leriche syndrome) the vessels of the lower extremities are less often affected. When the occlusive process involves the abdominal aorta, symptoms of imminent claudication and weakness involve hips, thighs, buttocks, and calves. On the other hand, if the occlusive process involves the external iliac or femoral arteries, symptoms are confined to the calf muscles. In the Leriche syndrome with complete aortic occlusion, hypertension is a common feature and some degree of sexual impotence is almost invariably present. This type of the disease appears in the middle decades; whereas the partial aortic occlusion and peripheral arterial diseases are more common in the later decades.

Diagnosis can be made on the basis of clinical manifestations alone but should be confirmed by visualization of the arterial tree through the use of arteriography. This diagnostic procedure has made it quite clear that, in the majority of instances, atherosclerotic occlusion is segmental in nature. Thus, in patients with absent pulses in the lower extremities, segmental occlusion of the aortic bifurcation and common iliac arteries can be anticipated; whereas, in the presence of femoral arterial pulsations but absent pulses below this site, segmental occlusion is located in the superficial femoral artery. When a radio-opaque medium is injected proximal to the site of occlusion and x-rays are made at appropriate intervals, the site of the occluded segment can be demonstrated and the patent vessel below the site of occlusion becomes filled with dye through collateral branches and is visualized also.

Atherosclerosis is a generalized disease and surgical correction of an occluded blood vessel will have no effect on the course of the disease. However, by restoring normal blood flow to parts distal to the block, it is possible to completely relieve symptoms, thus permitting many patients to return to work. There are two

operative procedures available for use in treating this disease. The first consists in excising the involved vessel longitudinally and removing the occluded thrombus and attached atherosclerotic intima. This procedure is known as thrombointimection. It is useful particularly for occlusions of limited extent and has the advantage that it permits restoration of blood flow without insertion of foreign material. The second type of surgical procedure consists in excision of the involved artery and replacement with a substitute or bypass of the occluded segment. The former is useful primarily in the treatment of occlusive lesions of the aortic bifurcation; whereas, the bypass procedure is most often employed in the treatment of occlusions of the femoral artery. Here, the involved vessel is undisturbed thus minimizing the likelihood of damage to functioning collaterals. The ends of the arterial substitute are anastomosed to the side of the artery above and below the site of occlusion thus providing, in effect, a large, new collateral (Figure 4). Although arterial homografts and autogenous vein grafts have been used extensively for this purpose, recently it has

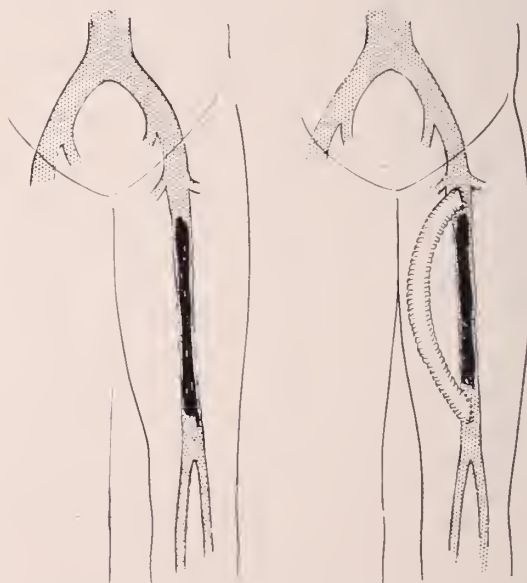


Figure 4.—Diagram showing segmental occlusion of the left superficial femoral artery treated by the bypass procedure using a crimped nylon graft.

been demonstrated that the crimped nylon tube is eminently satisfactory for this type of operation.

REFERENCES

1. Creech, O., Jr.; DeBakey, M. E.; Cooley, D. A., and Halpert, B.: Structural alterations in human aortic homografts one to two-and-one-half years after transplantation. *Surg., Gynec. & Obst.*, 103:147, 1956.
2. DeBakey, M. E.; Cooley, D. A., and Creech, O., Jr.: Surgical considerations of dissecting aneurysm of the aorta. *Ann. Surg.*, 142:586, 1955.
3. DeBakey, M. E.; Cooley, D. A., and Creech, O., Jr.: Aneurysm of the aorta treated by resection. *J.A.M.A.*, 163:1439, 1957.
4. DeBakey, M. E.; Creech, O., Jr., and Cooley, D. A.: Occlusive disease of the aorta and its treatment by resection and homograft replacement. *Ann. Surg.*, 140:290, 1954.
5. DeBakey, M. E.; Creech, O., Jr., and Morris, G. C., Jr.: Aneurysm of thoracoabdominal aorta involving celiac, superior mesenteric, and renal arteries: Report of four cases treated by resection and homograft replacement. *Ann. Surg.*, 144:549, 1956.
6. Edwards, W. S. and Tapp, J. S.: Chemically treated nylon tubes as arterial grafts. *Surgery*, 38:61, 1955.

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VALUE OF METRAZOL THERAPY IN THE AGED *

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NEW ORLEANS

INTRODUCTION

Because of lengthening life span and increased tensions associated with modern urban life, the present-day physician is more frequently faced with the problems and treatment of degenerative diseases than was his forefather. Diseases associated with aging involve several organ systems; for example, those emanating from arteriosclerosis and the wear and tear of everyday life. Consequently, the physician faces a constantly increasing number of geriatric patients. Many recent studies have been directed toward combatting the major problems of aging.¹⁻³ I feel the answer lies in an agent that will retard the aging process and one that can be used satisfactorily for long-range treatment of cases involving senile neuroses such as functional memory defects, mental confusion, mild behavioral disorders, irritability, depression, and antisocial attitudes in the senile.

Metrazol, a stimulant in circulatory and

respiratory failure, in collapse, alcoholic poisoning, fatigue, and senile confusion, seemed to me to be the drug of choice. Chesrow, Giacobe, and Wosika⁴ reported in 1951 that "the analeptic action of the drug and its ability to increase nerve impulse transmission" acted as a general tonic in 26 of 32 cases of arteriosclerosis, with no significant or unfavorable clinical side effects. For a clinical investigation Smigel, Serhus, and Barmak⁵ placed 32 patients on Metrazol therapy; of these 27 tolerated the drug well and showed definite improvement.

PHYSIOLOGY

The physiological action of Metrazol results in increased oxygenation of the blood due to stimulation of the respiratory and vasomotor centers of the medulla.

Cohn and Cohn⁶ reported beneficial effects on the entire cerebrospinal axis and postulated that Metrazol exerted its effects primarily on the vasomotor and respiratory centers. The drug promoted glycogen formation in the cerebral cortex and increased cell membrane permeability.

Review of the literature revealed that a general tonic effect is brought by decreasing rather than increasing hypertension. The drug raises blood pressure only in cases of hypotension.

SELECTION OF CASES

Patients to be put on Metrazol therapy were selected in a logical fashion from individuals under my care in nursing and convalescent homes. Metrazol, 6 grains per day, was administered either in tablet or liquid form to 17 patients with cerebral arteriosclerosis, some of whom were psychotic. The individuals varied in age from 64 to 85 years; the median was 75. All exhibited a degree of early, moderate, or advanced arteriosclerosis. Bear in mind that my aim was not to evaluate a drug but rather to improve the mental outlook and nourishment of individual patients. My primary interest is to provide the geriatrician or general practitioner with a drug of proven effectiveness for use in convalescent homes and private practice.

DISCUSSION

Of 17 cases given therapy in convales-

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cent homes, 11 (64.7 per cent) showed definite improvement. Of the 7 cases of early arteriosclerosis, 6 (85.7 per cent) were moderately improved. Of the 6 cases of moderate arteriosclerosis, 4 (66.67 per cent) were definitely improved. The 4 cases of late arteriosclerosis remained unchanged or continued to regress.

I should like to describe the 6 unimproved cases.

TABLE 1
CASES GIVEN METRAZOL THERAPY IN
CONVALESCENT HOMES

Initials	Age	Syndrome	Improvement	Drug Given
Case 6	84	Arteriosclerosis; depression	None	6 gr. daily
Case 12	77	Arteriosclerosis	None	6 gr. daily
C. M.	84	Arteriosclerosis	None	6 gr. daily
K. R.	85	Arteriosclerosis; depression	None	6 gr. daily
A. M.	82	Arteriosclerosis; senile psychoses	None	6 gr. daily
M. D.	70	Arteriosclerosis; depression	None	6 gr. daily

Case No. 6 was bedridden. She had a marked cerebral arteriosclerosis with cardiac decompensation, depressive psychosis, diabetes mellitus, fracture of the right acetabulum, and subclinical pellagra. When Metrazol therapy was instituted we hoped that her psychoses, nutrition, and cardiac decompensation would improve. However, after four months of therapy she had not improved and continues on a downhill course.

Case No. 12, also admitted to a convalescent home with diagnosis of psychosis and marked cerebral arteriosclerosis, had a history of prostatectomy one year previous to admission in 1955. He had been treated at a psychiatric institution because of a depressive psychosis. He seemed to have an improvement in appetite, gain in weight, and was better oriented; there was improvement in sensorium. However, there has been a decline in appetite, he is emaciated, has psychosis, and is progressively worse in sensorium. In spite of Metrazol therapy for five and a half months he went into a semicomatose state because of the marked arterial degeneration.

Case No. 13, C. M., age 84 years, was a female patient admitted to the sanatorium with marked cerebral arteriosclerosis and cerebral psychosis. The degree of sclerosis was so marked that she was confused, completely disoriented, unable to answer questions, and was a stuttering and blab-

bering imbecile. Her appearance was untidy. She soiled herself but was not bedridden. The radial arteries exhibited a degree of "pipe stem" sclerosis. She was put on two teaspoonfuls of liquid Metrazol twice daily, but after four months therapy showed no improvement in physical and mental status. There was no further degree of mental regression but I feel that she is a therapeutic failure.

Case No. 15, K. R., age 85 years, was admitted to a private nursing home with marked cerebral arteriosclerosis and manic depressive psychosis. Her blood pressure was low, 90 to 100 systolic and 50 to 60 diastolic. Nutritional edema of both extremities was present, and the patient was confused, disoriented, abusive and irritable, but cheerful and almost euphoric at times. Personal hygiene was excellent. After a trial of Rauwolfia type drugs and Metrazol which she took from 1935 to 1955 intermittently, because she thought we were trying to poison her, she was placed on liquid Metrazol in her coffee in February of 1956 and took this medication for four months. She showed no appreciable improvement in sensorium or in psychosis, was still abusive, striking nurses at times. Although her nutrition improved, this was accomplished by diet before 1955, so that we cannot say this is a therapeutic success but a dietary one.

A. M., an 82 year male, was admitted to a private sanatorium after hospitalization in a local institution. He had a history of poor appetite, senile psychosis, and moderate cerebral arteriosclerosis. He was apathetic, hostile, disoriented, withdrawn and had been treated with tranquilizing drugs. After one and a half years of this medication, in March of 1956, he was placed on liquid Metrazol, 2 teaspoonfuls twice daily. Although the appetite improved due to four months of Metrazol therapy, there was no clinical improvement and the patient was still mentally disturbed, apathetic, hostile, and withdrawn. Even before Metrazol was administered, however, the patient's physical status was satisfactory, his blood pressure and cardiac condition being good.

M. D., a 70 year female, was admitted to a private nursing home on two occasions, once in 1952 from a mental institution because she showed no positive response to electroshock therapy. She exhibited presenile early arteriosclerosis with depressive psychosis. She was put on Metrazol, 2 tablets twice daily, on two occasions for periods of thirty days. There was no benefit on either occasion. The patient continued to be depressed, withdrawn, and moody.

Of the 11 improved cases, 7 patients exhibited early arteriosclerosis and 4 suffered with moderate arteriosclerosis. All but one of the early arteriosclerotic in-

TABLE 2
CASES GIVEN METRAZOL THERAPY IN
CONVALESCENT HOMES

Initials	Age	Syndrome	Improvement	Drug Given
B. L.	68	Arteriosclerosis; epilepsy	Improved	6 gr. daily
F. O.	73	Arteriosclerosis	Improved	6 gr. daily
M. T.	78	Arteriosclerosis	Improved	6 gr. daily
J. L.	73	Arteriosclerosis	Improved	6 gr. daily
T. S.	75	Arteriosclerosis	Improved	6 gr. daily
V. C.	64	Arteriosclerosis	Improved	6 gr. daily
F. B.	82	Arteriosclerosis	Improved	6 gr. daily
M. P.	72	Arteriosclerosis	Improved	6 gr. daily
C. F.	65	Arteriosclerosis	Improved	6 gr. daily
M. O.	80	Arteriosclerosis	Improved	6 gr. daily
A. B.	75	Arteriosclerosis	Improved	6 gr. daily

dividuals had a variety of associated diseases, including heart diseases, arrested tuberculosis, Meniere's syndrome, epilepsy, late manifest lues, and psychoses. Before treatment with Metrazol this group was characterized by antisocial behavior; they were uncooperative, abusive, and depressed. In addition, there were marked emaciation and slight appetite, poor personal hygiene, hallucinations and dizziness, disorientation, and impairment of sensorium.

Metrazol therapy was given from two to sixteen months; the average term of medication was 7.7 months. After treatment the conditions mentioned above were absent or markedly improved. The greatest change occurred in their nutritional habits and mental attitudes.

I would like to describe two representative histories from this series to illustrate the most and least severe cases.

B. L., the most severe case, a 68 year old male, suffered with mitral stenosis, psychoses, grand mal epilepsy, and emphysema in addition to early arteriosclerosis that had been present for seven years. He had been hospitalized for twenty-five months and received Metrazol for fifteen months. Before treatment he showed marked emaciation, disorientation, hallucinations, frequent grand mal seizures, and was uncooperative. After treatment

he did not exhibit emaciation, was well nourished, had few hallucinations and fewer grand mal seizures, and was better oriented and more cooperative.

F. O., a 73 year old female, had early arteriosclerosis only and had been ill for two years, during which time she was hospitalized. Symptoms before treatment comprised confusion, palpitation, myocardial pain, loss of energy, poor appetite, and irritability. After two months on Metrazol, her appearance was better, appetite and nutrition were improved, and the patient was more energetic and less irritable.

Of the 4 individuals who had moderate arteriosclerosis, this condition was the primary cause of their hospitalization. Two of the 4 also had coronary disease, psychoses, and nutritional illness. Before treatment obvious symptoms in this group were poor personal hygiene, impaired sensorium, inadequate memory, poor nutrition, and psychoses. Metrazol was administered to this group from four to sixteen months, on an average of eleven months. After treatment with this drug, general improvement of all symptoms was noted.

SUMMARY AND CONCLUSIONS

This report is based on a study of 17 cases treated in nursing and convalescent homes. They presented lesions of arteriosclerosis concomitant with psychological and nutritional disorders. Metrazol therapy was administered in doses of 6 grains daily. Eleven of the 17 (64.7 per cent) showed definite clinical improvement. The 6 unimproved patients were markedly arteriosclerotic and had other and many serious complications. Of the 11 improved cases the average length of therapy was nine months, which fact would point up the need of long-term therapy before marked change can be anticipated. A small maintenance dose proved sufficient to produce an excellent therapeutic response. In my group of patients the most dramatic improvement was in mental outlook. Extensive destruction to brain tissue as a result of the arteriosclerosis was probably responsible for the lack of improvement in the 6 cases cited. One great advantage of using Metrazol was that no side effects were evident after long-term therapy. Certainly use of this drug seems

a step forward in retarding the aging processes.

REFERENCES

1. Schall, Edward: Oral Metrazol therapy in senile mental confusion and peripheral vascular spasm, *Clin. Med.* 3:9 (September) 1956.
2. Smigel, Joseph O.: Modern drug therapy in mentally confused institutionalized patients, *Med. Times* (May) 1956.
3. Kass, Irving, and Brown, Earl C.: The use of Metrazol as a mood conditioning drug: A discussion as to its mode of action, *J. Nerv. & Ment. Dis.*, 123:57 (January) 1956.
4. Chesrow, E. J., Giacobe, A. J., and Wosika, P. H.: Metrazol in arteriosclerosis associated with senility, *Geriatrics*, 6:319 (September-October) 1951.
5. Smigel, Joseph O., Serhus, Lawrence N., and Barnak, Samuel: Metrazol—Its place in geriatric therapy, *J. M. Soc. New Jersey*, 50:248 (June) 1953.
6. Cohn, Anni, and Cohn, Werner M.: Oral Metrazol treatment of senile and arteriosclerotic psychoses, *New York Jour. Med.*, 55:1324 (May) 1955.

ABO INCOMPATIBILITY

M. A. BODRON, JR., M. D. *

JAMES W. COTTER, M. D. *

SHREVEPORT

Hemolytic disease of the newborn resulting from incompatibility of the major blood groups is being recognized with increasing frequency. It was demonstrated by Halbrecht^{1,2} and strengthened by Hsia and Gellis³ that hemolytic disease due to ABO incompatibility is more common than that due to Rh incompatibility.

Although the pathogenesis of hemolytic disease of the newborn due to ABO incompatibility is not completely understood, the current concept is that the disease apparently results from a paternally inherited blood group factor. These factors referred to as 'A' or 'B' are not solely^{4,5} limited to the red cells but are secreted by all the tissues of the affected fetus. After crossing the placental barrier, these highly potent antigenic factors stimulate the production of antibodies by the mother. Witelsky⁶ has demonstrated that these antibodies are notably different from the normally circulating 'Anti-A' and 'Anti-B'. They are serum or albumin-active antibodies which are resistant to neutralization by the 'A' or 'B' blood group specific substance. These abnormal antibodies in

turn cross the placental barrier and produce a hemolytic process in the infant.

Hemolytic disease of the newborn due to 'A' or 'B' incompatibility is usually not anticipated and is diagnosed after the appearance of clinical jaundice within the first twenty-four to thirty-six hours. In our experience, the disease is less severe than that caused by Rh incompatibility and rarely is a cause of hydrops fetalis.⁷ There is no demonstrable relationship between the occurrence of the disease and previous pregnancies or blood transfusions. First-born infants are affected as often as infants born to mothers with normal antecedent pregnancies. There is usually mild or no anemia present with

TABLE 1.
GENERAL FEATURES OF ABO AND Rh
HEMOLYTIC DISEASE OF THE NEWBORN

	ABO	Rh
Prenatal diagnosis	Not anticipated	Anticipated
Severity	Mild	Severe
Onset of icterus	24-36 hours	Birth—24 hours
Hepatosplenomegaly	Mild or absent	Usual
Anemia	Mild or absent	Severe
Hydrops fetalis	Rare	Common
Number of pregnancy	Not related	Increase in severity with succeeding preg.
Spherocytosis	Marked	Unusual
Osmotic fragility	Marked	Seldom found
Coomb's test	Negative, may be weakly positive	Positive
ABO Coomb's test	Positive in 50-60%	—
Major blood type	Related	Unrelated

the onset of jaundice. Spherocytosis is always present and associated with an increased fragility of the red blood cells. The direct Coomb's test is usually negative but may on occasion be weakly positive. The ABO Coomb's test is positive in approximately 50 to 60 per cent of cases. In our recognized cases, the mothers' blood type has been 'O' and the in-

* Department of Pediatrics, Confederate Memorial Medical Center, Shreveport, Louisiana.

infants' blood type has been either 'A' or 'B'. Hepatosplenomegaly is mild or absent.

REPORT OF CASES

Clinical material for this report was taken from a review of cases from Confederate Memorial Medical Center Newborn Nursery and includes material beginning January 1, 1955, and ending March 31, 1957.

TABLE 2.
LIVE BORN ADMISSIONS TO NEWBORN NURSERY
JANUARY 1, 1955, THROUGH MARCH 31, 1957

Total	Nonwhite	White	Ratio of Nonwhite to White
9894	8933	961	9.1

TABLE 3.
PER CENT OF HEMOLYTIC DISEASE IN LIVE-BIRTHS
JANUARY 1, 1955 THROUGH MARCH 31, 1957

Total live-births	Occurrence of hemolytic disease	Per cent of total live-births	Rate
9894	38	0.4%	1/260

TABLE 4.
PER CENT ABO AND PER CENT Rh IN TOTAL CASES

Total hemolytic disease	No. ABO	No. Rh	ABO %	Rh %
38	31	7	81.6	18.4

During this period there was a total of 9894 admissions to the nursery. Of these, 8933 were nonwhite and 961 were white. This constitutes a ratio of nonwhite to white of 9 to 1. A diagnosis of hemolytic disease of the newborn was established in 38 of the total admissions indicating an incidence of 0.4 per cent or 1 in 260 live births. ABO incompatibility accounted for 31 or 81.6 per cent of the total. Rh incompatibility accounted for the remaining 18.4 per cent. There were 4 or 0.41 per cent ABO incompatibilities in white infants and 27 or 0.30 per cent in nonwhite infants. In 18 cases the mothers' blood type was 'O' and the infants' blood type was 'B'. In 13 cases the mothers' blood

TABLE 5.
OCCURRENCE BY RACE OF HEMOLYTIC DISEASE

	Rh	ABO	Per cent ABO Occurrence
White	6	4	0.41
Nonwhite	1	27	0.30
Total	7	31	

TABLE 6.
BLOOD GROUPS INVOLVED BY RACE

	Mother 'O' Infant 'B'	Mother 'O' Infant 'A'	Total
White	0	4	4
Nonwhite	18	9	27
Total	18	13	31

type was 'O' and the infants' blood type was 'A'. It was of interest to note that the 4 white infants had blood type 'A'. Of the 31 ABO incompatibilities 19 or 61.3 per cent were treated with exchange transfusion, 3 of which required a second exchange. All 7 of the Rh incompatibilities were treated with exchange transfusion, one of which required a second exchange. One of the Rh incompatibilities occurred in a nonwhite infant.

ABO incompatibility was recognized in 0.21 per cent of the total births in 1955, in 0.35 per cent in 1956, and in 0.54 per cent thus far in 1957. This suggests an increased awareness and recognition of this entity.

TABLE 7
PER CENT OF ABO INCOMPATIBILITY BY YEAR

	1955	1956	(three months) 1957
Live-born Admissions	4265	4511	1118
ABO Incompatibility	9	16	6
Per cent of total	0.21	0.35	0.54

In a series of 75 cases of ABO incompatibility reported by Leiken and Rhin-gold,⁹ 51 or 68 per cent required exchange transfusion. Of these 51, 34 cases required one exchange; 13 cases required two exchanges; 3 cases required three exchanges; and 1 required four exchanges.

MANAGEMENT

The management of the hemolytic disease of the newborn due to ABO incompatibility depends on several important factors which must be carefully evaluated before definitive measures can be undertaken. They are as follows: (1) the serum indirect bilirubin, (2) proper ABO set-up, (3) hemoglobin, (4) ABO Coomb's test.

Exchange transfusion in these infants hinges on the level of the serum indirect

bilirubin; the critical level being set at 20 milligrams per cent, since the incidence of kernicterus is higher with levels above this figure. There is no adequate explanation as to why kernicterus develops but it is generally felt that the height of the indirect bilirubin, the duration of the level and possibly the rapidity with which it rises are definitely related to the development of such a state. Because of this it is the serum indirect bilirubin which is the most important factor and the one which solely determines whether or not exchange transfusion is to be done.

Anemia may or may not be present in this disease and as a rule, if present, is to a mild degree. Therefore, the infant's hemoglobin in this entity usually plays only a minor role. It must be remembered, however, that a rapid decline in the hemoglobin is indication enough for exchange transfusion in the presence of hemolytic disease.

The ABO Coomb's test is only an adjunct in the diagnosis of hemolytic disease due to this incompatibility and has no part in the definitive treatment. A negative test does not exclude the diagnosis.

In some cases multiple exchange transfusions have been necessary to control the level of the serum indirect bilirubin. This has been true of 3 cases in our ABO series and of 1 of the Rh incompatibilities. It has been our experience that an exchange transfusion in a full term infant utilizes 70 milliliters of blood per pound or approximately 500 milliliters. This amount can be expected to reduce the bilirubin by 60 to 70 per cent. It was recently pointed out that the serum indirect bilirubin after exchange transfusion reaches an equilibrium in four to six hours at two-thirds to three-quarters of the indirect bilirubin prior to exchange.¹⁰ For example, an indirect bilirubin of 20 milligrams per cent prior to exchange is reduced to approximately 8 milligrams per cent. Four to six hours later a level of 14 to 15 milligrams per cent can be expected. After equilibrium has been

reached, a continued rise in the indirect bilirubin of 0.5 milligrams per cent per hour is indication for repeat exchange. This was reported by Vaughn and Brilian⁵ during the April, 1957 session of the American Academy of Pediatrics.

Exchange transfusions in these infants was done in the usual manner utilizing the umbilical vein. A number 5 polyethylene nasogastric feeding tube has been found to be extremely satisfactory and superior to previously used cannulas. We have found it possible to utilize the umbilical vein as late as five days after birth; however, the average age at which exchange transfusion was performed in the ABO incompatibilities was forty-three

TABLE 8
HEMOLYTIC DISEASE TREATED WITH EXCHANGE TRANSFUSION

	No. ABO	No. ABO Ex- changed	No. ABO Not ex- changed	No. Rh	No. Rh Ex- changed	No. Rh Not ex- changed
White	4	1	3	6	6	0
Nonwhite	27	18	9	1	1	0
Total	31	19	12	7	7	0
	61.3 per cent ABO exchanged					
	38.7 per cent not exchanged					

hours. On two occasions it was necessary to accomplish the exchange by radial artery and saphenous vein cut-downs. Type 'O' Rh specific blood with added Witebsky substance was used. As previously stated, 70 milliliters per pound is the amount used.

Of the total number of exchange transfusions in ABO incompatibilities in our series, one infant expired during the procedure. This infant was admitted in a moribund condition at the age of five days. Following diagnosis, exchange transfusion was begun two hours after admission. After 70 milliliters of blood had been exchanged, the baby vomited and respiration ceased. Attempts at resuscitation were unsuccessful. No further complications were encountered in the remainder of our series. Careful follow-up in these cases failed to reveal any evidence of kernicterus in these infants.

SUMMARY

Thirty-one cases of hemolytic disease of the newborn due to ABO incompatibility are reported. The disease is being recognized with increasing frequency and is more common than Rh incompatibility. In general the disease is mild; however, 60 to 70 per cent of cases will require at least one exchange transfusion. The disease is not anticipated until the onset of postnatal jaundice. Kernicterus is unusual but high bilirubin levels are as dangerous as with Rh incompatibility.

REFERENCES

1. Halbrecht, I.: Role of hemoagglutinins anti-A and anti-B in the pathogenesis of jaundice in the newborn (icterus neonatorum praecox). *Am. J. Dis. Child.* 68:248, 1944.
2. Halbrecht, I.: Icterus praecox. *J. Pediatrics.* 39:185, 1951.
3. Hsia, D. Y-Y. and Gellis, S. S.: Studies on erythroblastosis due to ABO incompatibility. *Pediatrics.* 13:503, 1954.
4. Vaughn, V. C.: Current status of hemolytic disease of the newborn. *Postgrad. Med.* 18:115, 1955.
5. Davidsohn, I.: ABO incompatibility as a cause of hemolytic disease of the newborn. *Obst. & Gyn.* 8:318, (Sept.) 1956.
6. Witebsky, E.: Interrelationship between the Rh system and the AB system. *Blood, Special Issue No. 2*, 1948, p. 66.
7. Nelson, W.: *Textbook of Pediatrics*. W. B. Saunders Co., Philadelphia, 1954, p. 987.
8. Wintrobe, M. M.: *Clinical Hematology*, Philadelphia, Lea and Febiger, 1956, p. 760.
9. Leikin, S. and Rheingold, J.: ABO erythroblastosis-A common entity. April session of the Am. Acad. of Ped., 1957, Washington, D. C.
10. Vaughn, V. C. and Brelian, F.: Dynamics of exchange transfusion in the newborn infant with respect to removal of bilirubin. April session of the Am. Acad. of Ped., 1957, Washington, D. C.

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VULVAR HEMATOMAS GYNECOLOGICAL AND OBSTETRICAL; REPORT OF FORTY-SIX CASES *

ROBERT J. TRACE, M. D.
NEW ORLEANS

It is difficult to understand why the American literature and many of the standard American gynecological textbooks are so void on the subject of traumatic vulvar hematomas. When the subject is

mentioned the discussion is often short and incomplete. The most significant report is that of Hudock, Dupayne and McGeary¹ who reviewed the literature up to July 1954, and reported 6 cases of their own. A total of 54 cases had been reported, and most of these were by German writers. This is difficult to understand when consideration is given to the fact that these hematomas are not uncommon, are of interesting etiology, rapid in onset, exquisitely painful, very disabling, and that there is little unanimity of opinion regarding their treatment.

This is a report of 21 cases of traumatic vulvar hematomata with an attempt to delineate the best method of treatment as determined by the hospital course and follow-up examinations.

In contradistinction to traumatic hematomas, the hematomata concerned with pregnancy have received a much more thorough coverage in the literature. McElin, Bowers, and Paalman² reported 187 cases in a review of the literature up to 1949, and added 73 cases of their own.

This paper will also present 24 hematomas associated with delivery and one occurring spontaneously during the prenatal period.

ANATOMY

The vulva is the external part of the female organs of generation and is a collective term for the labia minora, labia majora, mons veneris, clitoris, perineum, and vestibule of the vagina. Any or all of these parts may be involved in traumatic injury to the vulva, but the most common site is the labia majora. The labia majora are homologous to the scrotum in the male and are composed mainly of fatty tissue, but also contain the terminal insertions of the round ligaments. The main blood supply is the posterior labial artery which is a terminal branch of the internal pudendal. The clitoridal artery is also a terminal branch of the internal pudendal and its course is deep to the labia majora but may be ruptured with sufficient trauma. The fatty tissue of the labia majora is supplied with an

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extensive venous plexus which often contributes to the formation of a hematoma when traumatized.³ In puerperal hematomata the vaginal and the azygous arteries of the vagina are frequently involved.

PATHOLOGY

Vulvar hematoma formation usually takes place within the labia majora. When trauma has been great and hemorrhage excessive there may be widespread extravasation and dissection upward along the natural cleavage lines of fascial layers (Table 1). Since the round ligaments in-

TABLE 1
AREA OF DISSECTION

	GYN.	OB.
1. To Anus	7	8
2. External inguinal ring	3	3
3. Internal inguinal ring	2	2
4. Vaginal vault	4	6
5. Suprapubically	2	0
6. Peri-urethrally	3	5
TOTAL	21	24

sert into the labia majora, dissection of the hemorrhage may extend up the inguinal canal, into the broad ligament and retroperitoneally.

ETIOLOGY

In the nonobstetrical variety the etiological factor is extremely variable, but is due to some type of trauma. In the present series the most common injury was a fall.

The puerperal type, however, may be due to trauma or to an inadequate episiotomy repair. It seems logical that the increased incidence of varicosities of the vagina and vulva associated with pregnancy may be a factor. One case in this series had a spontaneous rupture of a varix with no trauma during the prenatal period. This patient was treated surgically, by placing a deep figure of eight suture of absorbable material through the area. She had an uneventful vaginal delivery one month later. Burke⁴ has recently reported a similar case occurring during the prenatal period and this patient also had an uneventful vaginal delivery five months later.

DIAGNOSIS

In the traumatic variety there is always a history of trauma and the patient usually presents herself shortly thereafter complaining of severe pain and swelling. Adequate examination is almost impossible without anesthesia. It is our feeling that complete and careful examination is essential in these cases with particular attention being paid to possible injury of the urethra, bladder, or rectum.

In the puerperal type the patient usually complains of more than normal postpartum perineal pain. Ordinarily this does not occur until the patient has been transferred from the delivery unit to her room, thus intermittent inspections of the perineum during the first few hours after delivery will aid in the early detection of hematomata formation. Again, anesthesia is usually necessary to determine the extent of hemorrhage.

All patients should have the basic laboratory studies of their hemoglobin, white blood cell count, bleeding and clotting times and a catheterized urine specimen.

CLASSIFICATION

Many classifications have been used in reporting vulvar hematomas, from measurement in centimeters to grading them as small, medium, or large. While it is of value to be as accurate as possible in the description of the extent of the lesion the actual size of the hematoma presenting at the introitus has no great bearing on prognosis. The degree of extravasation beyond the vulva is of much greater importance. Thus, a good pelvic examination becomes mandatory, especially in order to determine whether the dissection has been into the broad ligament and possibly retroperitoneal. If this does occur the treatment will be more radical and from a different approach. Eastman³ states that the cases collected by Williams in 1904, of subperitoneal hematoma had a mortality rate of 56 per cent. Hamilton⁵ reported a mortality rate of 8.3 per cent in the retroperitoneal type since the introduction of active surgical therapy. There is also the possibility of intraperi-

toneal rupture from the broad ligament and a generalized peritonitis if infection ensues.

In the present series the average age was 24.1 years and the average size 7 by 8 centimeters.

In the traumatic type 75 per cent were on the right and 25 per cent on the left. In the puerperal type 16 followed the use of a left mediolateral episiotomy and all were on the same side as the episiotomy. Of the ones occurring after a spontaneous delivery, 2 were on the right and 7 on the left. It would seem evident from the above that the hematomas occurring after an episiotomy resulted from an inadequate repair rather than trauma.

TREATMENT

A survey of the literature indicates the consensus is conservative management (bed rest, cold packs, and pressure) for small hematomas and surgical treatment of expanding or very large ones. It is our feeling that more liberal use of surgery, even in small hematomas, may yield somewhat better results. Nearly all lesions have a lacerated or abraded surface from trauma, and infection with abscess formation is always a possibility. Furthermore, it is not possible to predict which hemorrhages will stop with conservative treatment and which will continue to enlarge, necessitating surgical intervention later when the likelihood of infection is greater. Some may rupture spontaneously, though usually with incomplete drainage. From this series the length of time necessary for complete recovery was much longer when conservatism was used.

Of the 21 traumatic hematoma, 10 were treated conservatively and 11 surgically. Of the 24 puerperal type, 2 were treated conservatively and 22 surgically. Morbidity was measured by the length of hospital stay and the degree of febrile reaction (the temperature of 100.4 degrees was used as the basis of a febrile reaction). Of the injuries treated conservatively 71 per cent were febrile; whereas only 12 of the 33 treated surgically were febrile, or 36 per cent.

The length of hospital stay was reduced almost 50 per cent when surgery was employed. The average length of stay with conservative treatment was 9.4 days and with surgery 5.0 days.

The surgery used in all cases except the 1 prenatal case mentioned previously was incision and evacuation of all clots and complete obliteration of the large denuded, oozing area with figure of eight or mattress sutures of absorbable material. Drainage was not employed in any case and there were no seroma, abscess formation, or recurrence of the hematoma. If large bleeding vessels were seen and could be ligated separately, this was done.

No definite opinion could be formed from this study regarding the efficacy of antibiotic therapy. It is the feeling of this department that chemotherapy should be employed when specifically indicated and not as a routine procedure. However, when it is used we prefer either a combination of penicillin and streptomycin or one of the broad spectrum agents due to the large number of gram negative organisms in this area.

Upon a two-week follow-up examination, 28 of the 33 cases treated surgically were described as completely healed and the remaining 5 were tender but with no induration present. However, 7 of the 12 cases treated conservatively were tender with induration and 5 were listed as tender.

PROGNOSIS

The prognosis in both traumatic and puerperal hematomas is excellent if prompt surgical treatment is undertaken. In this series there were no deaths, no retroperitoneal involvement, and no cases of post-operative dyspareunia. Lyons⁶ has reported a case of dyspareunia after surgical drainage of a vulvar hematoma followed by packing the area and allowing secondary healing to take place.

SUMMARY

1. Both traumatic and puerperal hematomas are relatively common, extremely painful, and very disabling.
2. The size and course of dissection is

variable and of great import. Anesthesia is usually necessary for an accurate diagnosis.

3. If treated conservatively these hematomas can continue to enlarge, liquify, or undergo abscess formation.

4. No complications occurred from prompt surgical intervention and the morbidity and length of hospital stay were greatly reduced with this treatment.

5. The two week follow-up examinations revealed a more satisfactory result in the cases treated surgically.

REFERENCES

1. Hudock, J., Dupayne, N., and McGeary, J.: *Am. J. Obst. & Gynec.* 70:1064, 1955.
2. McElin, T., Bowers, V., Paalman, R.: *Am. J. Obst. & Gynec.* 67:356, 1954.
3. Eastman, N., *Obstetrics*, ed. 11, New York 1956, Appleton-Century-Crofts, Inc.
4. Burke, J.: *Am. J. Obst. & Gynec.* 71:929, 1956.
5. Hamilton, H.: *Am. J. Obst. & Gynec.* 39:642, 1940.
6. Lyons, A.: *New England J. Med.* 240:461, 1949.

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IN MEMORIAM

Rudolph Matas, M. D.

Dr. Rudolph Matas, oldest member of the Louisiana State Medical Society and its most distinguished surgeon, died in New Orleans at Touro Infirmary, on September 23, 1957.

His career was one of fame and achievement. Its accomplishments were made possible by a great mind, and fortunately they were acknowledged during his own lifetime, in such a fashion as has come to few men. His friends, his associates in organized medicine, and the advancement of medicine over the world, owe him

a debt of gratitude. When he entered the field of medicine in 1877, the modern era had not begun. The Darwinian theory of evolution was being discussed with vitriolic comments. The germ theory of disease, so-called, was just worthy of a passing glance. When a lecturer appeared in what is now the Tulane School of Medicine, in 1877, to speak on the Listerian method and the germ theory of disease, only four out of the student body of some two hundred appeared to listen. Dr. Matas was one of the four. When he died with his age in the late nineties, he had seen the most productive phase of the science and art of medicine progress through its most fruitful sixty-five years. For along this path of progress it was he who directed many aspects of this advancement in medical knowledge. His biographers will point to many "firsts" in medical achievement, and particularly to the Matas operation of endoaneurismorrhaphy. This was acclaimed the greatest advance in blood vessel surgery in over two hundred years and was the beginning of the present extraordinary developments in that field.

He was America's most honored surgeon, with evidences of acclaim here and abroad. Dr. William J. Mayo called him "the most learned surgeon I have ever known." Among his distinguished awards was the world's highest for general surgery, the Henry Bigelow Medal of the Boston Surgical Society. The world's highest award for vascular surgery is named in his honor.

His services in the cause of medicine as a teacher, his inspiration to his associates and students, and his benefactions to the Tulane School of Medicine, match his achievements in surgery. He devoted a large part of his time and energy for forty-two years to teaching in the Medical School of Tulane University. He was Professor of Surgery and Head of the department from 1894 to 1927, and Emeritus in 1927 until his death. His bequests to the University in the form of his medical library and in the financial pro-

visions of his will were a model of generosity and forethought.

Dr. Matas's achievements and fame were not the result of being tossed into prominence by the waves of fate. The pinnacle upon which he stood rested on a firm pyramid with a broad base of energy, effort, and painstaking attention to detail, which was not allowed to obscure the vision of the goal to be attained. His capacity for work and his physical endurance were in themselves remarkable. As a student, his hours of study were many times those of his roommates; at eleven o'clock when the others would go to bed, he was accustomed to put the lamp on the floor, stretch out on a blanket, and study on until 4:00 or 5:00 in the morning. This was repeated night after night, and at 7:00 A.M. he would be as fresh as any who had had the usual eight hours.

As a surgeon, he would repeatedly tell internes and residents to call him specifically at 1:00 or 4:00 A.M. to report progress of a seriously ill patient and to receive further instructions as to treatment.

As an author, he would rewrite and revise a manuscript repeatedly, giving endless care and thought to each sentence.

His fund of information and his cultural knowledge were a source of astonishment to all who had the privilege of contact with him. His choice of words in English was superb. He spoke fluent

French, Spanish, Italian, Portuguese, good German and Romanian, and some portion of Scandinavian. In 1938, he addressed the delegates of the International Surgical Congress in four languages.

His services to organized medicine were distinguished and appreciated. He served on many committees in the interests of the Orleans Parish and the Louisiana State Medical Societies. He was President of the Louisiana State Medical Society and Vice President of The American Medical Association on two occasions and first recipient of its distinguished service medal (1938).

His generous bequest of five thousand dollars to the Orleans Parish Medical Society will benefit the present members and future generations.

He was Editor in Chief of this Journal for two years, 1883 to 1885, and Co-Editor, 1885 to 1890. From his bibliography of six hundred or more titles many were contributed to the pages of this Journal.

Dr. Matas attributed what he called his good fortune to inheriting good health and preserving his enthusiasm for things medical. To this must be added a rare capacity for sustained work directed by one of the world's great minds. With him went the satisfaction of having left the world better than he found it, and having advanced the cause of medicine by the vastness of his contributions. His career was and will be a living inspiration.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

DUES FOR 1958 MEMBERSHIP

Dues for 1958 membership in the Louisiana State Medical Society, American Medical Association and component parish and district societies, are payable now. The Parish and State Society dues may be included in one check and sent to the Secretary of your Parish Society. A separate check should be issued to the American Medical

Association and should also be forwarded to the Secretary of the Parish Society, and he will forward State and AMA dues to the Secretary-Treasurer of the State Society. Dues for District Society should be sent to the Secretary of your district society.

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ciation, \$25.00. Information in regard to amount of Parish and District Society dues should be secured from the Secretary of the Parish and District Societies.

DEATHS 1957
MEMBERS OF LOUISIANA STATE
MEDICAL SOCIETY

- Dr. Ernest Emile Allgeyer, Waveland, Mississippi, September 27
Dr. William Edward Barker, Jr., Plaquemine, October 5
Dr. Floyd Nash Beckcom, DeRidder, March 25
Dr. William Henry Block, Jackson, Mississippi, August 28
Dr. Ivy Devine Boyett, Kentwood, February 4
Dr. Houston Carlisle Chambers, Rayville, March 31
Dr. Frank Chetta, New Orleans, October 30
Dr. John David Frazar, DeRidder, March 9
Dr. Earl Jones, Alexandria, October 7
Dr. Joseph Starnes Kopfler, Kenner, January 16
Dr. Richard Shaffer Kramer, Jennings, February 10
Dr. Adolphe Landry, Delcambre, October 9
Dr. Burl Benjamin Lane, Jr., Zachary, September 17
Dr. Lewis Harris Levy, New Orleans, September 13
Dr. Rudolph Matas, New Orleans, September 23
Dr. Anees Mogabgab, New Orleans, April 18
Dr. Louis F. Robinson, Winnsboro, January 19
Dr. Robert Elmore Rowland, Pineville, March 11
Dr. Kirby Arthur Roy, Mansura, March 14
Dr. Leonard Case Scott, New Orleans, March 12
Dr. John B. Sutton, Shreveport, March 8
Dr. Samuel D. Yongue, Breaux Bridge, September 29

ACCIDENTS IN THE UNITED STATES *

Last year 95,000 Americans died prematurely because of injuries sustained in accidents. The annual number of accidental deaths averaged about 75,000 early in this century, but just before 1930 the yearly average rose to about 100,000 and has remained at that level.

The stability of the over-all accident death toll masks a considerable improvement in many aspects of the accident problem. Death rates per 100,000 population have declined by over 40 per cent, from 99.5, the peak in 1906, to 56.5 in 1956. For all accidents except motor-vehicle, the decline has been even sharper—more than two-thirds of the peak figure. The 1956 rate was 30.8 per 100,000.

In recent years accidents have consistently ranked fourth among the leading causes of death.

They have been outranked only by such major illnesses as heart disease, cancer, and cerebrovascular lesions (mainly cerebral hemorrhage). The rise of accidents among the leading causes of death in this century has resulted from the declines in mortality from the major communicable diseases—not from any increase in accident mortality itself.

In 1956 accidents caused 6 per cent of all deaths in the United States, and at ages 1 to 36 they were the leading cause of death. Rates were highest at the upper ages, but accidents were heavily outranked as a cause of death at these ages by heart and other diseases associated with aging. Accidental death rates were nearly 2½ times higher among males than females, and higher among nonwhites than whites.

The costs of accidents are not felt merely in the loss of human lives. In 1956, according to the National Safety Council, accidental injuries numbered over 9½ million, including 350,000 resulting in some degree of permanent impairment. In dollars, total accident costs (including property damage, wage losses because of inability to work, etc.) were estimated at about \$11.2 billion—almost as much as Americans spend for all private medical services.

Accidents occur in four kinds of environments—on the job, in public places, at home, and in motor vehicles. In the last 30 years, accidents on the job and in public places have decreased substantially, but those involving motor vehicles have increased as the volume of motor traffic has expanded.

On-the-job accidents

One of the brightest elements in the entire situation has been the success achieved against fatal accidents on the job ("work" accidents). In spite of a greatly expanded labor force, the death toll of workers on the job has been reduced from 19,000 in 1928—the first year these data became available—to 14,300, as estimated by the National Safety Council for 1956. Death rates in 1956, 23 per 100,000 workers, established a record minimum at just over half the peak rate of 43 in 1937.

The most hazardous industries in 1956 were mines and other extractive industries, where the mortality rate reached 100 per 100,000 workers. The construction industry followed with a rate nearly three-fourths as high, 71 deaths per 100,000 workers. The safest industries were trade, manufacturing, public utilities, and services with mortality below the national average.

Much of the success against work accidents has been due to intensive safety campaigns, resulting in increased safety consciousness among both employers and employees, and to improvements in conditions at work and in levels of living and of medical care. Protective devices have been adopted against the major accident and health hazards

* *Health Information Foundation* Vol. VI, No. 8, October, 1957.

in industry, including high temperature, silica dust, radiation, and toxic chemicals. Shorter working hours have helped to cut industrial fatigue, so often a factor in accidents. In many industrial processes the replacement of noxious substances by harmless ones, and the substitution of automatic machinery with proper safety devices for hazardous manual techniques, have helped considerably to reduce the accident toll.

Recreation, public transportation

Also encouraging is the substantial reduction in mortality from public accidents, i.e., non-motor-vehicle accidents occurring in public places. Moreover, this reduction has taken place in spite of the increased amount of leisure time enjoyed by the American people in recent years, with much of it devoted to sports and other recreational activities in public places. Deaths from these accidents numbered about 21,000 in 1928 but dropped to 16,000 by 1956.

About a fourth of these deaths—4,000 in 1956—were due to the drowning of persons while swimming or playing in water or falling into water. If drownings in transportation or boat accidents are included, the total exceeds 5,000. Falls and firearms combined accounted for an additional fourth of the public-accident death toll in 1956.

Almost an additional fourth—3,650 in 1956—involved some form of transportation, primarily air, water, and railroad. The largest toll—1,300 in 1956—came from aircraft accidents, both military and civilian. In view of the huge increase over the last few years in the volume of air traffic, this figure, although high, is still a considerable improvement over former years.

The largest number of fatal aviation accidents usually occurs in private flying, chiefly for pleasure and other noncommercial purposes. Domestic scheduled airlines have a superior record. In no year since the 1933-37 period has the death toll on scheduled airlines exceeded 200, and in only four years—1947, 1951, 1955, and 1956—has it exceeded even 100. Over the last 20 years the average annual death rate per 100 million passenger miles on these carriers was cut by over 90 per cent, from 7.80 in 1933-37 to 0.62 in 1956.

Just as heartening a story can be told about progress in railroad safety. Of the major forms of transportation, railroad passenger trains currently provide one of the safest means of passage, 0.20 deaths per 100 million passenger miles. Deaths in all types of railway accidents (not merely those directly involving the transportation of passengers) have declined sharply, from about 10,000 in 1918 to 2,600 in 1956. Since 1918, deaths of passengers have declined by more than 85 per cent, from over 500 in 1918 to 62 in 1956.

Accidents in the home

In the home the record has been less promis-

ing. With minor fluctuations, the number of deaths from home accidents has averaged around 30,000 each year since 1928; in 1956 the total was 28,000. Thus the American home was involved in nearly 30 per cent of all accidental deaths in 1956.

About half—13,600 in 1956—resulted from falls, primarily to persons aged 6 or over. Older people are especially vulnerable because of the greater amount of time they spend in the home and their frequently impaired physical condition.

Fatal burns from fires, and other deaths associated with fire, took over 5,000 lives in the home during 1956. Fire accidents are an important cause of death at all ages and are the leading cause of accidental death in the home at ages 1 through 64. Aged persons and children under five have the highest mortality rates and constitute half the victims in this type of accident.

A large proportion of the victims are trapped in homes destroyed by fire. Important among causes of death by burns in the home are careless smoking, accidental igniting of clothing on a stove or open fireplace, and explosion of cooking or heating appliances. In the past few years deaths have declined considerably as a result of general modernization of homes and widespread use of improved facilities for cooking, heating, lighting, and laundering.

About 850 deaths in the home were reported in 1956 as due to poisonous gas. Poisonings by solid or liquid substances accounted for an additional 1,050 deaths.

Motor-vehicle accidents

Accidents involving motor vehicles took over 40,000 lives in 1956, the largest number ever recorded. Deaths rose steadily early in the century from a low start at 400, the annual average for 1903-07, and by 1937 and 1942 peaks of just under 40,000 deaths were reached. Temporary declines during World War II were reversed by a sharp rise afterward. Except for a minor dip during 1954, the course of the death toll since 1950 has been steadily upward.

The rising number of deaths alone, however, tells only part of the story. Since 1900 the U. S. population has more than doubled, and so the death rate per 100,000 persons is a better measure of risk. This rate, like the number of deaths, reached peaks in 1931, 1937, and 1941 (28.3, 31.2, and 29.8, respectively). After declines during World War II, the rate climbed slowly, reaching 25.7 in 1956—still under the former high levels.

The recent increases in the population death rate are not surprising, in view of the growing importance of motor vehicles in American life. While just over 4,000 motor vehicles were produced in this country during 1900, over 9 million were turned out in 1955 alone. In 1956,

64.5 million motor vehicles were registered, while about 77 million drivers were licensed. Moreover, mileage traveled has increased at an almost phenomenal rate. Preliminary estimates indicate that motor vehicles traveled 630 billion miles in 1956, an average of just under 10,000 miles per vehicle.

As a result, a more realistic measure of motor-vehicle risk is the death rate per 100 million vehicle miles. This rate declined consistently, from a peak of 16.7 in 1934, to a record low of 6.3 in 1954. There was a slight rise to 6.4 in 1955 and 1956. This index suggests that safety in motor-vehicle travel has actually increased substantially since early in the century.

The greatest achievement has been the reduction in pedestrian deaths since 1937. From 1927 to 1937 these deaths rose from just under 11,000 to 15,500 but decreased thereafter, especially during the war. By 1956 the number stood at just under 8,000. Pedestrian death rates are lowest at ages 15-44, somewhat higher at ages under 15, and highest at 45 and over. In this last age group, nearly 5,000 such deaths occurred in 1956—three-fifths of the total.

Noncollision accidents

A rising trend of deaths in noncollision accidents has largely offset the decrease in the number of pedestrian fatalities. The annual death toll in noncollision accidents averaged just under 9,000 from 1927 thru 1941, dropped to about 6,000 during the war years, and since then has risen steadily and rapidly, reaching 14,650 in 1956.

Rising even more sharply has been the toll from collisions between motor vehicles. Deaths in 1956—13,850—were four times as numerous as those in 1927. Here, as with fatal noncollision accidents, persons in the age group 15-24 were the chief victims, and an overwhelming proportion of the accidents occurred in rural areas.

A recent investigation into one aspect of the motor-vehicle accident problem, violations by drivers in fatal accidents, showed that nearly one-third were exceeding the speed limit, or a safe speed, at the time of the accident. In urban areas, violating right-of-way was the next most common condition, while in rural areas failure to keep to the right of the center line followed in importance. In 22 out of 100 fatal accidents, a driver or an adult pedestrian had been drinking; "driving while under the influence of alcohol"

was a factor in 7 per cent of all fatal accidents.

The weather was rainy, snowy, or foggy in one out of six fatal accidents, and in nearly as many cases there was some obstruction to the driver's vision. In nearly one out of 12 fatal accidents an unsafe condition was reported in at least one of the vehicles involved, most often unsafe brakes. About one out of 14 drivers had a physical condition—most often they were asleep—that could have been a contributing factor in the accident. About the same proportion of pedestrians in fatal accidents had physical defects.

Over one-fourth of the drivers in fatal accidents were between 18 and 24, and nine out of ten were men. But no valid conclusions can be drawn from these data about the comparative safety records of the different sex and age groups, since the total mileage driven by each is unknown.

In an attempt to reduce the motor-vehicle death toll, automobile manufacturers have begun to build protective mechanisms into their product, such as safety belts, doors that remain closed under impact, flexible steering wheels, dashboards without protrusions and covered with shock-absorbing material, and similar devices. In addition, an important step was taken by the directors of the Automobile Manufacturers Association last June when they unanimously agreed to de-emphasize speed and horsepower in the industry's advertising. For such preliminary measures to be intensified, however, the public must be educated to accept and even to demand at least these minimum protections.

In general, safety against accidents has achieved the greatest success where society has been able to bring its organized influence to bear. Safety regulations are stringently enforced in industry, railroads, scheduled air transport, public beaches, and similar environments, with gratifying results.

On the other hand, where the individual himself must assume most of the responsibility for his own safety and in many instances for that of others (in such places as the home and motor vehicle) safety progress has been slower. Although accidents are often beyond human control, a large element of carelessness and irresponsibility is involved in others. Perhaps the only real solution to the accident problem lies in intensified educational activities designed to spread safety conditions among all parts of the population.

MEDICAL NEWS SECTION

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

OFFICERS OF THE SURGICAL ASSOCIATION OF LOUISIANA FOR THE YEAR 1958

The following officers were elected for the year 1958 at the tenth annual meeting, held at the St. Charles Hotel, New Orleans, November 3, 1957: Charles R. Walters, M. D., President; Gordon W. Peek, M. D., 1st Vice-President; Walter F. Becker, M. D., 2nd Vice-President; E. L. Leckert, M. D., Treasurer; Henry G. Butker, M. D., Secretary. Additional members of the Board of Directors and their term of office are: Isidore Cohn, M. D., 1957-60; T. Jeff McHugh, M. D., 1957-59; Daniel J. Fourrier, M. D., 1955-58; Richard L. Buck, M. D., 1956-59; W. Robyn Hardy, Sr., M. D., 1956-59; C. Grenes Cole, M. D., 1957-60; H. H. Hardy, M. D., 1957-58.

LOUISIANA CHAPTER AMERICAN COLLEGE OF CHEST PHYSICIANS

A meeting of the Louisiana Chapter of the American College of Chest Physicians will be held on Friday, December 6, 1957, at the Veterans Administration Hospital, New Orleans, from 2:00 p. m. to 4:30 p. m. The scientific program will consist of the following: "Physiological Manifestations of Alveolar Hypoventilation," by Alfred P. Fishman, M. D., New York, and "Current Aspects in the Surgical Treatment of Acquired Cardiac Diseases," by Charles A. Beskin, M. D., Baton Rouge.

An important business meeting will follow which will include election of officers and consideration of plans for the Louisiana Chapter for the coming year.

LOUISIANA STATE SOCIETY OF ANESTHESIOLOGISTS

At the annual business meeting on November 14, 1957, of the Louisiana State Society of Anesthesiologists, the following officers were elected: President, Richard H. Morris, M. D., Alexandria; Vice-President, John B. Parmley, M. D., New Or-

leans; Secretary-Treasurer, William E. Trotti, M. D., New Orleans; Delegate, Wallace Merriam, M. D., New Orleans; Alternate Delegate, Vernon C. Fagan, M. D., New Orleans.

SECTIONAL MEETING AMERICAN COLLEGE OF SURGEONS Jackson, Mississippi, January 16-18, 1958

All members of the medical profession are invited to attend a three-day Sectional Meeting of the American College of Surgeons in Jackson, Mississippi, January 16-18, 1958, at the Hotel Heidelberg.

Dr. J. Harvey Johnston, Jr., Clinical Assistant Professor of Surgery, University of Mississippi School of Medicine, is Chairman of the Local Advisory Committee on Arrangements.

An innovation at this year's Sectional Meetings is the Fellowship Luncheon, featuring a panel discussion on College activities with a question period. The president of the College, Dr. William L. Estes, Jr., will preside.

Dr. Johnston will preside over the opening session Thursday morning, January 16. This session will include the following reports:

Choice of Operation in Diseases of the Colon.

John M. Waugh, M. D., FACS, Rochester, Minnesota.

Management of Mediastinal Thyroids. George E. Twente, M. D., FACS, Jackson.

Treatment of Hand Injuries. Daniel C. Riordan, M. D., New Orleans.

Panel Discussion on Complications of Abdominal Surgery:

Moderator: James D. Hardy, M. D., FACS, Jackson.

Collaborators: John J. Farrel, M. D., FACS, Miami; Howard Mahorner, M. D., FACS, New Orleans; Harwell Wilson, M. D., FACS, Memphis; Robert M. Zollinger, M. D., FACS, Columbus.

Panel Discussion on Cancer: Chemotherapy, Metastasis and Limitations of Surgery:

Presiding: Willard H. Parsons, M.D., FACS, Vicksburg.

Moderator: I. S. Ravdin, M.D., FACS, Philadelphia, Chairman, Board of Regents, American College of Surgeons.

Collaborators: Alton Ochsner, M.D., FACS, New Orleans; Albert Segaloff, M.D., New Orleans; Robert D. Sloan, M.D., Jackson.

Dr. Curtis P. Artz, Jackson, will preside over the afternoon session:

Common Errors in Management of Fractures. Thomas H. Blake, M.D., FACS, Jackson.

Treatment of Thrombosis of Major Veins. Howard Mahorner, M.D., FACS, New Orleans.

Diagnosis and Treatment of Surface Tumors.

J. Harold Conn, M.D., FACS, Jackson.

Symposium on Pancreas and Liver:

Leader: J. Harvey Johnston, Jr.

Acute Pancreatitis. J. Harvey Johnston, Jr.

Chronic Pancreatitis. Robert M. Zollinger, M.D., FACS, Columbus.

Results of Radical Resection for Carcinoma of the Pancreas and Ampulla of Vater. John M. Waugh, M.D., FACS, Rochester.

Recognition and Therapy of Acute Liver Failure. John R. Snively, M.D., Jackson.

A dinner tour of Mississippi's new medical center will be held Thursday evening, with Dr. James D. Hardy presiding. Dr. I. S. Ravdin will preside over the motion picture program which follows from 8 to 10 p. m.

Dr. T. E. Ross, Jr., Hattiesburg, will preside over the Friday morning session:

Adrenalectomy in Breast Cancer. Willard H. Parsons, M.D., FACS, Vicksburg.

Diagnosis of Massive Gastrointestinal Bleeding. John J. Farrell, M.D., FACS, Miami.

Early Management of Burns. William H. Moretz, M.D., FACS, Augusta.

The Status of Antibiotic Prophylaxis. Fred Allison, Jr., M.D., Jackson.

Symposium on Management of Multiple Injuries: **Presiding:** Jones W. Lamb, M.D., FACS, Greenwood.

Leader: John M. Howard, M.D., FACS, Emory University.

Principles of Wound Management. Champ Lyons, M.D., FACS, Birmingham.

Emergency Management of Fractures. Robert A. Knight, M.D., FACS, Memphis.

Treatment of Acute Head Injuries. Dean H. Echols, M.D., FACS, New Orleans.

Treatment of Acute Chest Injuries. Rudolf J. Noer, M.D., FACS, Louisville.

Urologic Injuries. James W. Headstream, M.D., FACS, Little Rock.

Dr. Watts R. Webb, M.D., FACS, Jackson,

will preside over the luncheon panel discussion:

New Horizons in Cardiac and Lung Surgery:

Moderator: H. William Scott, Jr., M.D., FACS, Nashville.

Collaborators: Oscar Creech, Jr., M.D., FACS, New Orleans; Edward F. Parker, M.D., Charleston; Watts R. Webb.

Dr. George E. Twente, M.D., FACS, Jackson, presides over the P.M. session:

Symposium on Pediatric Surgery:

Pre- and Postoperative Care of Infants. James N. Etteldorf, M.D., Memphis.

Teratomas in Children. Hugh B. Lynn, M.D., FACS, Louisville.

Abdominal Emergencies in Infants. C. Everett Koop, M.D., FACS, Philadelphia.

Urinary Anomalies in Children. Temple Ainsworth, M.D., FACS, Jackson.

Panel Discussion on Nutrition Therapy and Transfusions in Surgical Patients:

Moderator: Curtis P. Artz, M.D., FACS, Jackson.

Collaborators: Warren N. Bell, M.D., Jackson; James N. Etteldorf, M.D., Memphis; Champ Lyons, M.D., FACS, Birmingham.

Hodding Carter, Owner and Publisher of the **Delta Democrat Times**, will be the dinner guest speaker Friday evening. Dr. J. Harvey Johnston, Jr., M.D., FACS, Jackson, will preside.

On Saturday, the final day of the meeting, Dr. Robert B. McLean, M.D., FACS, Jackson, will serve as presiding officer:

Present-Day Concepts in Treatment of Intestinal Obstruction. Rudolf J. Noer, M.D., FACS, Louisville.

Ovarian Tumors. Conrad G. Collins, M.D., FACS, New Orleans.

Urologic Complications in Abdominal Surgery. James W. Headstream, M.D., FACS, Little Rock.

Panel Discussion on Treatment of Carcinoma of the Cervix, Present Status:

Moderator: Conrad G. Collins, M.D., FACS, New Orleans.

Collaborators: Vincent P. Collins, M.D., Houston; Michael Newton, M.D., FACS, Jackson; Cyrus C. Erickson, M.D., Memphis.

The Sectional Meeting will close with the Fellowship Luncheon.

Dr. H. Prather Saunders, Associate Director, American College of Surgeons, is in charge of all Sectional Meetings for the College.

LOUISIANA STATE UROLOGICAL SOCIETY

The next meeting of the Louisiana State Urological Society will be held in Lafayette, Louisiana. Officers elected for this year are: President, Dr. Thomas Kimbrough; Vice-president, Dr. Thom-

as Latiolais; Secretary-Treasurer, Dr. William Vildebil.

The past meeting was held in January at Shreveport. Attending this week-end meeting were ninety-two Urologists of the states of Louisiana, Texas, Arkansas, Mississippi, and Oklahoma. Dr. Ormond Culp of Rochester, Minnesota and Dr. Robert McIver of Jacksonville, Florida were the guest speakers. Scientific Papers were also presented by Dr. Eugene Vickery of New Orleans, Dr. W. Kitteridge of New Orleans, and Dr. Murphy Yearwood of Shreveport.

An outstanding event of this meeting was the *Cajun Oyster Bust*. This was a stag affair and the Doctors opened their own oysters. The oysters were served in every eatable manner. This entertainment was the highlight of the whole week-end.

CONTAMINATED WATER MAY PLAY ROLE IN POLIO SPREAD

When an outbreak of polio occurs in a specific area within a community, it may be caused by pollution of the area's drinking water, three Nebraska researchers reported.

While a community's water may be judged safe at pumping stations and other regular testing sites, it may become contaminated within a small area of the distribution system. Therefore, the water in an outbreak area should be tested and, if necessary, boiled before drinking, they said in a recent (June 22) *Journal of the American Medical Association*.

Dr. Paul M. Bancroft, Warren E. Engelhard, Ph.D., and Dr. Charles A. Evans, Lincoln, Neb., studied an unusual polio outbreak occurring in the summer of 1952 in Huskerville, a community of University of Nebraska students and their families near Lincoln.

All but two cases, one paralytic and one non-paralytic, occurred in two and one-half of the four rows of barracks-like buildings. During a five-week period, more than 10 per cent of the 347 children in the affected two and one-half rows

developed poliomyelitis and 4.6 per cent suffered paralytic polio. During this same period, there were no cases among the 256 children residing in the adjoining section of the village.

The persons living in the village were "strikingly select," in that they were of approximately the same age and of the same cultural, social and physical backgrounds. There were no geographical or social barriers and no biological or other environmental features that accounted for the unusual distribution of cases. Measles and chickenpox spread through the same community without any higher incidence occurring in particular areas, the authors said.

A variety of evidence pointed to pollution of the water supply within the affected area as "the sole factor" which could be used to explain the disease distribution, they said.

Contaminated water has long been suggested as a mode of spreading polio; however, there has been no convincing evidence presented that pollution of a community water supply was responsible.

In the Huskerville outbreak, it appears that it was not the community water system, but only water near the affected individuals that was contaminated. If this is true, it means that the role of water in the spread of polio must be re-examined, the authors said.

Institutional epidemics or the clustering of cases in certain buildings or even in certain parts of buildings, or in certain small villages, might be explained if pollution of water near individuals is an important factor, they said.

Until the significance of "proximate pollution" of water in the spread of polio can be evaluated, the boiling of drinking water in the home is a measure that should be considered as one precaution of possible value in prevention of the disease in times of epidemic, especially when it is remembered that cross connections and other conditions favoring localized contamination of water supplies are still common in many water systems, they concluded.

WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY ORLEANS PARISH

The Woman's Auxiliary to the Orleans Parish Medical Society entertained at a program tea Wednesday afternoon, November 11th, at the Orleans Club on St. Charles Avenue.

The president, Mrs. Eugene H. Countiss, presided at the meeting.

Mrs. Charles Farris, Jr., program chairman introduced Mr. Fred Wagner who gave a most interesting talk on one of his hobbies, "Making your own Christmas Cards."

Receiving the members and their guests with Mrs. Countiss were four of the board members: Mmes. Nicholas Chetta, chairman of Essay Con-

test; George F. Sustendal, chairman Doctor's Day; Spencer B. McNair, chairman Nurse Recruitment; and Edwin A. Socola, chairman Public Relations.

Mrs. Fred O. Brumfield, chairman of hostesses, was assisted in the dining room by Mmes. Shelley R. Gaines, Clarence E. Black, Jr., Vincent P. Blandino, Edward R. Christian, Joseph J. Ciolino, Anthony Failla and Carlo P. Cabibi.

The tea table centered with a lovely arrangement of pink roses was presided over by Mrs. Robyn Hardy and Mrs. L. Sidney Charbonnet, Jr.

Mrs. Branch J. Aymond,
Publicity Chairman

BOOK REVIEWS

The Physician-Writer's Book . . . Tricks of the Trade of Medical Writing: by Richard M. Hewitt, A.M., M.D. Philadelphia, W. B. Saunders Company, 1957. pp. 415. Price \$9.00.

For a great many years Dr. Richard M. Hewitt has supervised the publications of the Mayo Clinic. He is therefore admirably fitted for the task of teaching the tricks of medical writing to both authors and editors. Not many of them are omitted in the seven sections which comprise his book on the subject. There is also a final section consisting of twenty-one appendices, which this reviewer would have preferred to have follow the particular chapters to which they are applicable.

This is a book to dip into rather than to read consecutively. Its usefulness is greatly increased by an index of twenty-one pages from which, an extensive sampling shows, nothing important has been omitted.

Perhaps the best way to convey the field and value of this book is to comment upon special items:

When, says Dr. Hewitt, the editor's foibles or the writer's desires come into conflict with the publisher's policies, it is the publisher who has the last word. For that reason, among others, the writer should not trouble himself too much with such matters as hyphenation.

The author's name should always be signed in exactly the same way, to which it might be added, particularly if his is one of the more common names.

A great deal of attention should be paid to the wording of the title and the subtitle, the latter being one way of simplifying life for both indexers of the literature and searchers thereof. A word might have been said on the wisdom—at least when the makers of programs permit—of formulating the title after the contribution is prepared, since the latter does not always turn out as originally planned.

Illustrations are expensive. They should therefore be carefully prepared and not employed at all unless they tell the story better than the text. Due regard should be paid to the quality of the paper used in the journal in which they are to be published; if the paper is of inferior grade, it might be best to eliminate the illustrations.

Tables presenting similar data should be prepared in similar fashion and their headings should be parallel. The sound distinction is made between the presentation of numerical data and their statistical analysis. Errors in numerical data are made with the greatest of ease; the not entirely humorous anecdote is told of two very capable physicians who had seized every possible chance in their paper to make the text and tables disagree.

The same point of view should be maintained

throughout a paper. Tenses should be used with consistency. The reference of pronouns should be correct, and the widely used "this" must have proper ancestry. Listings should be in the same form throughout, not a combination of nouns and sentences and clauses.

Case is not a synonym for patient. It is too bad that the unspeakable "case where" construction was not castigated.

Abbreviations should be used with caution and preferably not at all. The human memory is surprisingly frail.

Transitional words are of great value. The limitations of the language make the list of such words brief and it is unfortunate that the very useful nonetheless was omitted from it.

Note-taking is basic but useful only when there is one idea to a note. No one who has not followed this simple plan has any idea of how helpful it can be.

In some of the usages he advises—or to which he takes exception—Dr. Hewitt has already lost his battle. Webster sanctions the plural of such words as exostosis and metastasis, and this usage seems simpler and more direct than exostotic lesions and metastatic growths. Webster is also willing for the physician to transfuse the patient and so is this reviewer. Colostomy may be less desirable than colonic stoma, but there is a medical metonymy and such terms as "functioning colostomy" have apparently come to stay. It is too bad that Dr. Hewitt did not pay his respects to the pretentious word anesthesiologist; the simpler term anesthetist was apparently a total casualty of the war years.

On the whole, however, Dr. Hewitt's policies and practices are entirely commendable and very sensible. He warns, for instance, against the promiscuous use of distal and proximal and calls for the judicious use of former and latter. He speaks sensibly about what he calls strong repetition, which is deliberate and intentional and is achieved by parallelism. He also mentions the achievement of emphasis by the position of a thought, whether in the sentence or the paragraph, in neither of which is a central location the place to accomplish it.

Dr. Hewitt makes the distinction between inclusive and selective reviews of the literature and says some wise words about omitting both when neither is needed. More emphasis might have been put upon selectivity in preparing to write a paper; reading everything on the subject can be both wasteful of effort and extremely confusing. He apparently approves the practice, to which this reviewer takes exception, of omitting titles to save space in a list of references and of tying the text into center and side headings for the same purpose. Diffuseness is, of course, to be avoided, but

the impression is given, perhaps unintentionally, that it is always desirable to be brief. Long sentences, if properly constructed, can be both clear and forceful, and too much condensation may be the road to obscurity, particularly if the writer, in the fulness of his own knowledge, omits some of the steps which the reader may need.

This reviewer cannot agree with Dr. Hewitt in the methods suggested for what he calls "the rearrangement" of the article. A paper which needs what was done to his example would be best handled by complete rewriting, if only by the criterion of the aphorism that there is no good writing, only good re-writing. When rearrangement of material is necessary in the final copy, enclosing the sentences (or clauses or phrases or words) in parentheses and numbering them in the desired order will do the job much more efficiently than Dr. Hewitt's cut-and-paste technique; the method suggested has been found, by experience, to be practically fool-proof, even to inexperienced typists.

It is often wise advice to destroy what one has written, particularly, as Dr. Samuel Johnson said, if the passage seems particularly fine to its creator. Quiller Couch said it more directly—hold the manuscript for a certain time, read it over, and then "murder your darlings."

Dr. Hewitt says in his preface that he has been accused of being too lavish in his credits to others. The accusation is well founded. It is delightful, however, to find a physician who can quote, with equal facility, from Dickens, Cervantes and Ian Maclaren and from Gowers and Quiller Couch and Fowler. He seems to have missed only one very useful reference work, the *Oxford Authors' and Printers' Dictionary*. In another edition he will undoubtedly quote from Margaret Nicholson's excellent adaptation of Fowler's classic text; Miss Nicholson's book was published after Dr. Hewitt's had appeared.

Dr. Hewitt, as this review indicates, has produced a useful book. This reviewer would have classified it as such if she had found in it no more than these two ideas, that the attempt to misunderstand a manuscript is the basis of the editorial function and that it is an indexer's duty to make an item discoverable under any heading beneath which a reasonable person would look for it.

ELIZABETH M. MCFETRIDGE, M.A.

Services for Children with Hearing Impairment; by American Public Health Assoc., Inc., N. Y. 1956, pp 124, (no price noted).

This booklet carries the subtitle, *A Guide for public health personnel*. Its usefulness will extend over a much wider field. It is one of a series which "is directed chiefly to persons in voluntary or official agencies or community organizations whose decisions singly or jointly determine the

extent, coverage, content and operation of community services to children, particularly those who are handicapped.

It presents a very thorough, comprehensive coverage of the problems of the hearing handicapped child. The material is well organized and not too technical for one not well acquainted with the field. For the specialist in this area there are the Appendices in which much worthwhile factual information is gathered together.

Otologists might take exception to the recommendation of antibiotic therapy for acute otitis media without any further qualifying statement. It must be remembered that this is a general presentation of the total aspects of hearing-loss and as such merely mentions some of the controversial questions.

It is highly recommended for any one interested in hearing impairments whether from an academic or personal aspect.

JEANNETTE K. LAGUAITE, PH.D.

PUBLICATIONS RECEIVED

The C. V. Mosby Co., St. Louis: *Allergy in Pediatric Practice*, by William B. Sherman, M. D., and Walter R. Kessler, M. D.

Philosophical Library, Inc., N. Y.: *Fear: Contagion and Conquest*, by James Clark Moloney, M. D.

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Charles C Thomas, Publisher, Springfield, Ill.: *A System of Ophthalmic Illustration*, by Peter Hansell, M.R.C.S.; *Ear, Nose and Throat Dysfunctions due to Deficiencies and Imbalances*, by Sam E. Roberts, M. D., with a foreword by Morris Fishbein, M. D.; *Digitalis*, compiled and edited by E. Grey Dimond, M. D.; *Host-Parasite Relationships in Living Cells*, a Symposium sponsored by The James W. McLaughlin Fellowship Program, University of Texas, Medical Branch; *The Physician's Own Library*, by Mary Louise Marshall; *Psychobiology, a Science of Man*, by Adolph Meyer, M. D.; *Introduction to Clinical Endocrinology*, by A. Stuart Mason, M. D.; *The Epileptic Seizure*, by Cosimo Ajmone-Marsan, M. D., and Bruce L. Ralston, M. D.; *Clinical Pathology Data*, by C. J. Dickinson, B.A., with foreword by C. E. Dent, M. D. (2nd edit.); *Bone Tumors*, by David C. Dahlin, M. D.; *Roentgen Diagnosis of Abdominal Tumors in Childhood*, by Charles M. Nice, Jr. M. D., and Alexander R. Margulis, M. D., and Leo G. Rigler, M. D.; *Anatomies of Pain*, by K. D. Keele, M. D.; *Tuberculosis*, by J. Arthur Myers, M. D.; *Recovery From Schizophrenia*, by John Eisele Davis, Sc.D.

The Williams & Wilkins Co., Balt.: *May's Manual of Diseases of the Eye*, revised and edited by Charles A. Perera, M. D. (22nd edit.)

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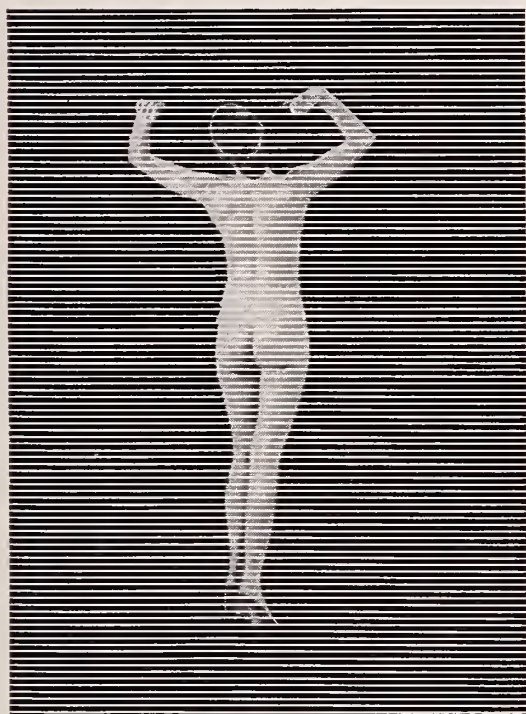
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Intravaginal Applicator for Improved Treatment of Vaginitis

This smooth, unbreakable, plastic device is designed for simplified vaginal insertion of Floraquin tablets by the patient. It places tablets in the fornices and thus assures coating of the entire vaginal mucosa as the tablets disintegrate.

A Floraquin applicator is supplied with each box of 50 tablets. G. D. Searle & Co., Chicago 80, Illinois. Research in the Service of Medicine.

SEARLE

simple, well-tolerated routine for "sluggish" older patients

one tablet t.i.d.

DECHOLIN[®]

"therapeutic bile"

Establishes free drainage of biliary system—effectively combats bile stasis and improves intestinal function.

Corrects constipation without catharsis—copious, free-flowing bile overcomes tendency to hard, dry stools and provides the natural stimulant to peristalsis.

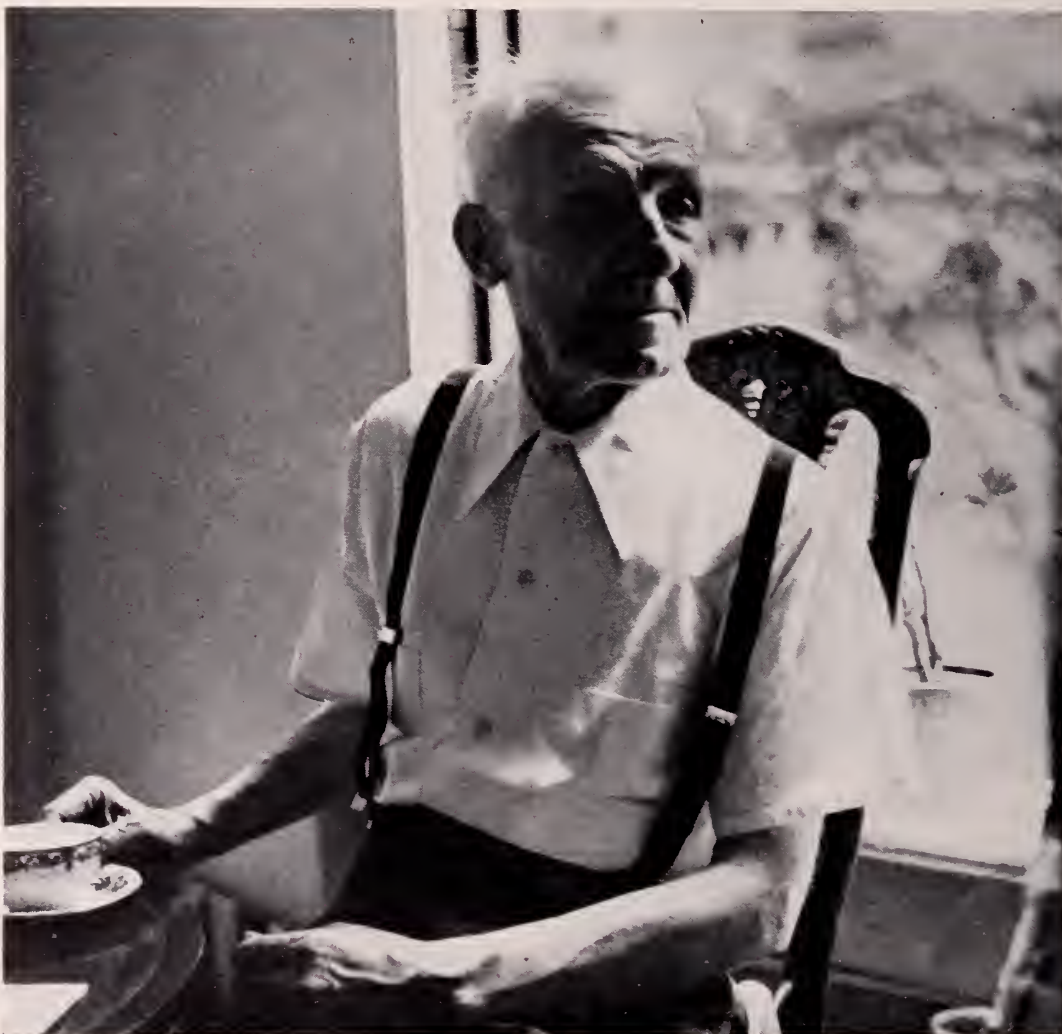
Relieves certain G.I. complaints—improved biliary and intestinal function enhance medical regimens in hepatobiliary disorders.

DECHOLIN Tablets: (dehydrocholic acid, AMES) 3¾ gr.

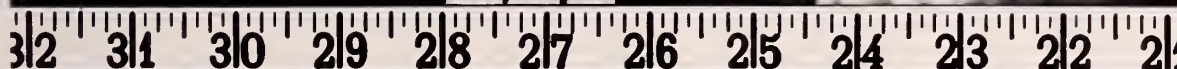
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AMES COMPANY, INC • ELKHART, INDIANA • Ames Company of Canada, Ltd., Toronto



an oxazine...not an amphetamine
appetite curbed...
sleep undisturbed



PRELUDIN®

(brand of phenmetrazine hydrochloride)

developed specifically
for appetite suppression

Chemically different from the amphetamines, PRELUDIN provides potent appetite suppression with little or no central stimulation.

- **rarely causes loss of sleep**¹—may be given late enough in the day to curtail after-dinner "nibbling," yet not hinder sleep.
- **avoids nervous tension and "jitters"**²—simultaneous sedation is not required.³

"...in clinical use the side-effects of nervousness, hyperexcitability, euphoria, and insomnia are much less than with the amphetamine compounds and rarely cause difficulty."⁴

References: (1) Gelvin, E. P.; McGavack, T. H., and Kenigsberg, S.: *Am. J. Digest. Dis.* 1:155, 1956. (2) Hall, J. O. S., Jr.: *Dallas M. J.* 42:497, 1956.

(3) Natenshan, A. L.: *Am. Pract. & Digest Treat.* 7:1456, 1956. (4) Council on Pharmacy and Chemistry, *New and Nonofficial Remedies: J.A.M.A.* 163:356 (Feb. 2) 1957.

PRELUDIN® (brand of phenmetrazine hydrochloride). Scored, square, pink tablets of 25 mg. Under license from C. H. Boehringer Sohn, Ingelheim.

GEIGY Ardsley, New York

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*optimal dosages for ATARAX.
based on thousands of case histories:*

25 mg. (q.i.d.)

for these 25 adult indications:

TENSION SENILE ANXIETY MENOPAUSAL SYNDROME ANXIETY PREMENSTRUAL TENSION
PHOBIA HYPOCHONDRIASIS TICS FUNCTIONAL G. I. DISORDERS PRE-OPERATIVE ANXIETY
HYSTERIA PRENATAL ANXIETY • AND ADJUNCTIVELY IN CEREBRAL ARTERIOSCLEROSIS
PEPTIC ULCER HYPERTENSION COLITIS NEUROSES DYSPNEA INSOMNIA
PRURITIS ASTHMA ALCOHOLISM DERMATITIS PARKINSONISM PSORIASIS

perhaps the safest ataraxic known

PEACE OF MIND **ATARAX**[®]

Supplied: In tiny 10 mg. (orange) and 25 mg. (green) tablets. Also now available in 100 mg. tablets. Bottles of 100. ATARAX Syrup, 10 mg. per tsp., in pint bottles. Prescription only.

(BRAND OF HYDROXYZINE)

Tablets-Syrup

10 mg. (t.i.d.)

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ANXIETY TICS •
TEMPER TANTRUMS

NOW: SAFE... QUICK

ATARAX[®] PARENTERAL SOLUTION



when Peace of Mind can't wait

In daily practice: always have it handy

- to calm the acutely disturbed or hysterical patient
- to rehabilitate the alcoholic

In hospitals: use it routinely

- to make overwrought patients manageable without loss of alertness
- to allay anxiety and control vomiting before and after surgery and childbirth

Supplied: 10 cc. multiple-dose vials. The adult dosage is 25 mg. to 50 mg. (1-2 cc.) intramuscularly, 3 to 4 times daily, at 4 hour intervals. The moderated dosage level for children under 12, when given intramuscularly, has not yet been established, and the oral dosage should be used.



NEW YORK 17, NEW YORK

If
Monilial
overgrowth
is a factor

ACHROSTATIN* V

Tetracycline (phosphate-buffered) and Nystatin

Combines ACHROMYCIN V with NYSTATIN

ACHROSTATIN V combines ACHROMYCIN† V . . .
the new rapid-acting oral form of
ACHROMYCIN† Tetracycline . . . noted for its
outstanding effectiveness against more than
50 different infections . . . and NYSTATIN . . . the
antifungal specific. ACHROSTATIN V provides
particularly effective therapy for those
patients who are prone to monilial overgrowth
during a protracted course
of antibiotic treatment.

supplied:

ACHROSTATIN V CAPSULES
contain 250 mg. tetracycline
HCl equivalent (phosphate-
buffered) and 250,000
units Nystatin.

dosage:

Basic oral dosage (6-7 mg.
per lb. body weight per day)
in the average adult is
4 capsules of ACHROSTATIN V
per day, equivalent to
1 Gm. of ACHROMYCIN V.

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WHEN YOU TREAT RESPIRATORY INFECTIONS...

PRESCRIBE

Pentids

SQUIBB 200,000 UNIT BUFFERED PENICILLIN G POTASSIUM TABLETS

- six years of experience with Pentids in millions of patients confirm clinical effectiveness and safety
- excellent results with 1 or 2 tablets t.i.d. for many common bacterial infections
- may be given without regard to meals
- economical . . . Pentids cost less than other penicillin salts

Just 1 or 2 tablets t.i.d. Bottles of 12, 100 and 500

NEW! PENTIDS FOR SYRUP. Orange flavored powder which, when prepared with water, provides 60 cc. of syrup with a potency of 200,000 units of penicillin G potassium per 5 cc. teaspoonful.

Also available: Pentids Capsules, Pentids Soluble Tablets. Pentid-Sulfas.

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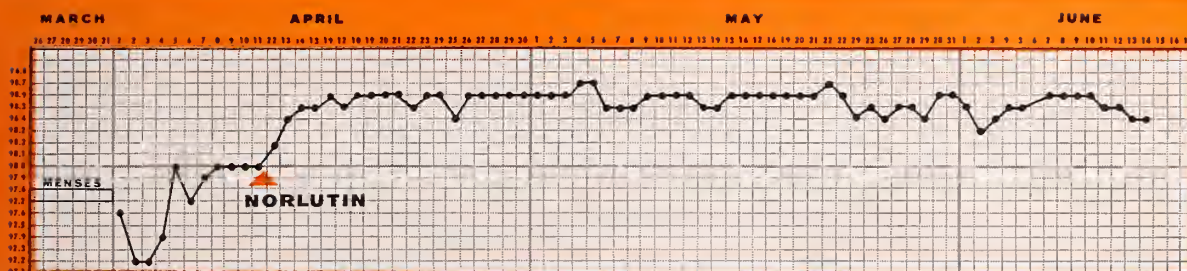


Squibb Quality—the Priceless Ingredient

oral progestational agent
with
unexcelled potency
and
unsurpassed efficacy

With NORLUTIN you can now prescribe truly effective *oral* progestational therapy. Small oral doses of this new and distinctive progestogen produce the biologic effects of injected progesterone.

THERMOGENIC EFFECT



▲ When NORLUTIN was administered to patients with uniphasic temperature curves and menstrual irregularities a rise in basal temperature occurred.*

NORLUTINTM

(norethindrone, Parke-Davis)

major advance in female hormone therapy
for certain disorders
of menstruation and pregnancy

INDICATIONS FOR NORLUTIN: conditions involving deficiency of progestogen, such as primary and secondary amenorrhea, menstrual irregularity, functional uterine bleeding, endocrine infertility, habitual abortion, threatened abortion, premenstrual tension, and dysmenorrhea.

PACKAGING: 5-mg. scored tablets (C. T. No. 882), bottles of 30.

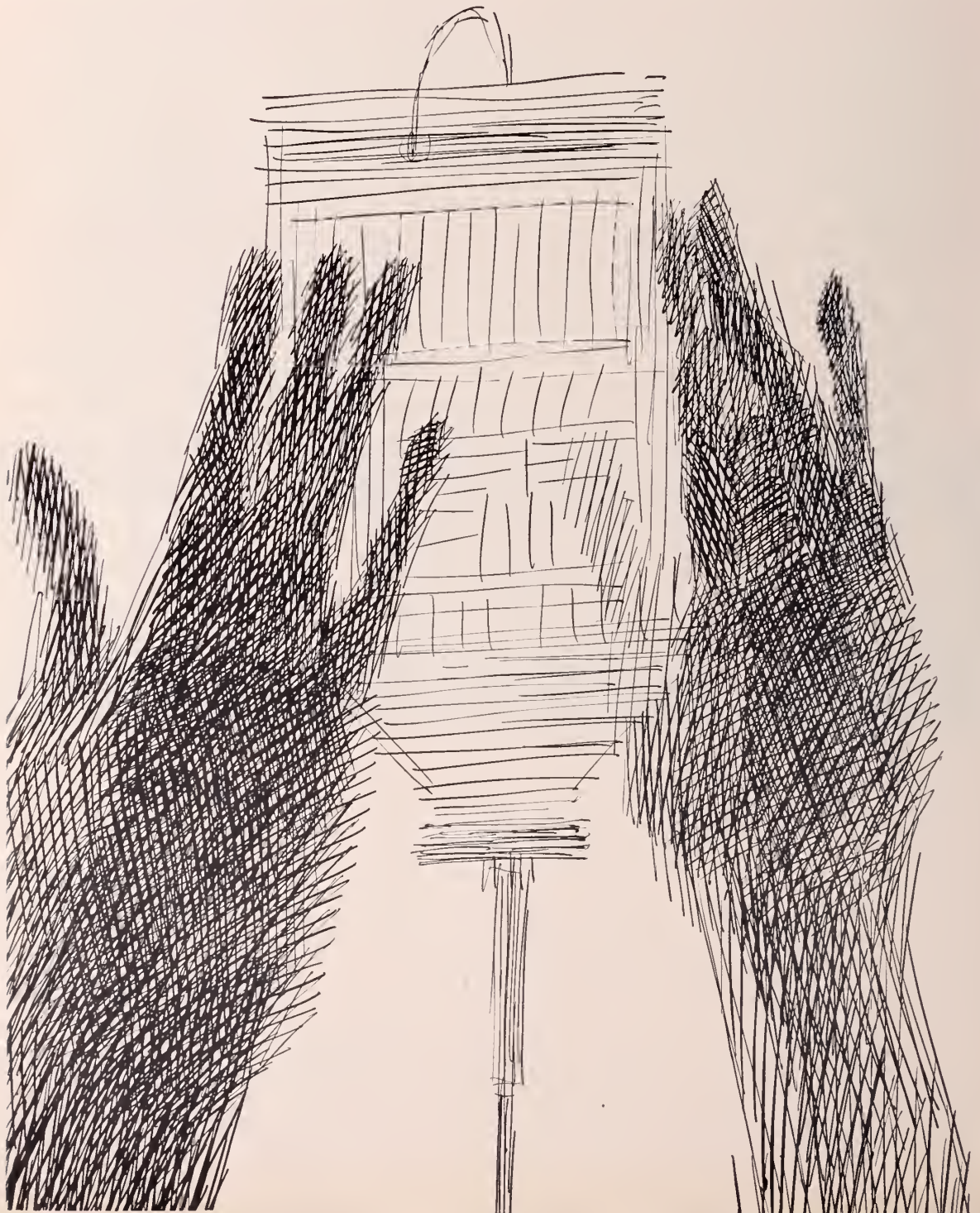
*Greenblatt, R. B.: *J. Clin. Endocrinol.* 16:869, 1956.

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announcing
a new lifesaving antibiotic



discovered by Abbott Laboratories

SPONTIN®

(Ristocetin, Abbott)

A new, important antibiotic, SPONTIN, is now being made available—in limited supply—to the medical profession.

Discovered and developed by Abbott Laboratories, SPONTIN proved highly effective—even lifesaving—in clinical trials with *patients in whom other antibiotics had failed.*

Because of intricate and technical production problems, only a limited supply of SPONTIN is available currently. But, as soon as these problems are solved, SPONTIN will be offered to all hospitals.

For, essentially, SPONTIN is a drug for hospital use—for patients who are seriously ill, or even dying, from organisms that have become resistant to present-day therapy.

In its present form SPONTIN is administered intravenously, using the drip technique. The required dosage is dissolved in 5% Dextrose in water and administered in 35 to 40 minutes.

You'll find SPONTIN effective against a wide range of gram-positive coccal infections. And especially in those dangerous staphylococcal problems that resist other antibiotics. Some of the important therapeutic points include:

- 1) *successful short-term therapy for acute or subacute endocarditis*
- 2) *new antimicrobial activity—no natural resistance to SPONTIN was found in tests involving hundreds of coccal strains*
- 3) *antimicrobial action against which resistance is rare—and extremely difficult to induce*
- 4) *bactericidal action at effective therapeutic dosages.*

SPONTIN comes as a sterile, lyophilized powder in vials representing 500 mg. of ristocetin A activity. While distribution is limited, your emergency needs will be handled by your Abbott representative, or at the nearest Abbott branch. Literature is available on request.

Abbott

New Chemotherapy

ARALEN[®] *in* RHEUMATOID ARTHRITIS

Extensive studies of rheumatoid arthritis and related collagen diseases—in this country and abroad—have shown the antimalarial Aralen phosphate to be highly effective and well tolerated in a large percentage of patients.

Clinical Results with Aralen in Rheumatoid Arthritis

Author	No. of Cases	Major Improvement	Minor Improvement	No Effect
Haydu ¹	28	22	5	1
Rinehart ²	25	12	4	9
Freedman ³	50	43	3	4
Bagnall ⁴	108	77	12	19
Bruckner ⁵	36	32	0	4
Cohen and Calkins ⁶	22	17	3	2
Scherbel et al. ⁷	25	9	8	8
Total	294	212 (72%)	35 (12%)	47 (16%)

- Success dependent upon persistent treatment
- Often of benefit where other agents have failed
- Remissions on therapy well maintained
- Remission of 3 to 12 months possible even if treatment is interrupted
- Tachyphylaxis not evident

GENERAL EFFECTS:

- Patient feels better
- Patient looks better
- Exercise tolerance increases
- Walking speed and hand grip improves

LABORATORY EFFECTS:

- E. S. R. may fall slowly

ANALGESICS AND STEROIDS:

- Requirements usually reduced or eliminated

JOINT EFFECTS:

- Pain and tenderness relieved
- Mobility increases
- Swellings diminish or disappear
- Muscle strength improves
- Rheumatic nodules may disappear
- Even severe or advanced deformity may improve
- Active inflammatory process usually subsides
- Joint effusion may diminish

DOSAGE:

Aralen is cumulative in action and requires four to twelve weeks of administration before therapeutic effects become apparent.

Latest information indicates that an initial daily dose of 250 mg. of Aralen phosphate is preferable to the higher doses sometimes recommended. However, if side effects appear, withdraw Aralen for several days until they subside. Reinstate treatment with 125 mg. daily and, if well tolerated, increase to 250 mg. The usual maintenance dose is 250 mg. daily.

New Chemotherapy

INDICATIONS:

- Rheumatoid arthritis, acute or chronic —with or without adjunctive therapy.
- Spondylitis
- Arthritis associated with lupus erythematosus or psoriasis

HOW SUPPLIED:

Aralen phosphate: 250 mg. tablets in bottles of 100 and 1000.
125 mg. tablets in bottles of 100.

Tolerance:

Aralen is usually well tolerated. Toxic effects are usually mild and to date have been transitory in nature, disappearing completely either on continuance or cessation of therapy or on reduction in dosage.

Gastrointestinal disturbances (e.g. nausea, rarely vomiting, diarrhea, abdominal cramps, anorexia) are frequent manifestations of intolerance. Temporary blurring of vision (due to interference with accommodation) is also relatively frequent.

Pleomorphic skin eruptions (e.g. lichenoid, maculopapular, purpuric), although generally mild, may preclude the use of an optimum dosage schedule. If a skin reaction persists on a reduced dosage schedule, or recurs after reinstitution of treatment with gradually increasing doses, discontinue Aralen till the lesion again disappears and consider resuming treatment with Plaquenil® (brand of hydroxychloroquine).

Less frequently transitory vertigo, headache, lassitude, or neurological disturbances, such as nervousness, irritability, emotional change, and nightmares have been reported. Instances of unexplained slight gradual weight loss as the patient's general health and arthritic condition improved have been mentioned. Occasional instances of bleaching (depigmentation) of the hair have been described.

Although an occasional instance of leukopenia, with normal differential count, has been reported (WBC about 3000), it has not proved troublesome because it has always been reversible on discontinuance, or diminution of the dose. Even spontaneous reversal may occur while full dosage is maintained.

THEORY OF ACTION:

Aralen appears to suppress or induce remission of rheumatoid inflammatory processes by inhibiting adenosinetriphosphatase.

Caution:

Aralen is known to concentrate in the liver and, although hepatic damage has never been reported, the drug should be used with caution in the presence of liver disease. In the presence of severe gastrointestinal, neurological, or blood disorders, the drug should be used with caution or not at all. If such disorders occur during the course of therapy, the drug should be discontinued. Concomitant use of gold or phenylbutazone with Aralen should be avoided because of the tendency of these agents to produce drug dermatitis.

Clinical Comments:

Of fifty patients receiving Aralen therapy, "43 have become really well; that is, they have no stiffness, and any pain that occurs can reasonably be attributed to use of joints affected by secondary degenerative changes. They have no evidence of joint inflammation, but may have a raised erythrocyte sedimentation rate. They have little or no need for analgesics."

Freedman³

"One hundred and twenty-five private patients have been carefully followed clinically and haematologically while receiving well over 200 patient-years of chloroquine [Aralen] therapy. The results are considered good in 70%, one-half of these cases being in remission. Improved work performance, sedimentation rate, and hemoglobin levels paralleled the major objective gain in this 70%. 90% of them remained on chloroquine [Aralen] therapy, half for more than two years. Classical peripheral rheumatoid arthritis, spondylitis, arthritis of juvenile onset, and rheumatoid disease with psoriasis, all appeared to respond about equally well.

"It is suggested that chloroquine comes closer to the ideal for long-term, safe, control of rheumatoid disease than any other agent now available."

Bagnall⁴

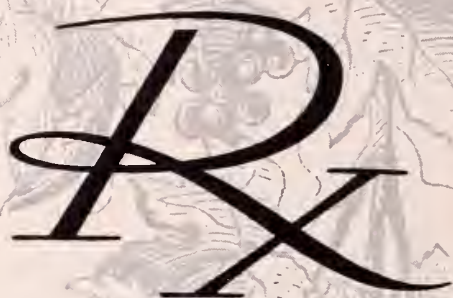
"Out of the 36 rheumatoid arthritis cases we treated . . . favorable results were obtained in 32 cases."

Bruckner et al.⁵

References

1. Haydu, G.G.: Rheumatoid arthritis therapy: a rationale and the use of chloroquine diphosphate, *Am. J. M. Sc.* 225:71, Jan., 1953.
2. Rinehart, R.E.: Chloroquine therapy in rheumatoid arthritis, *Northwest Med.* 54:713, July, 1955.
3. Freedman, A.: Chloroquine and rheumatoid arthritis, a short-term controlled trial, *Ann. Rheum. Dis.* 15:251, Sept., 1956.
4. Bagnall, A.W.: The value of chloroquine in rheumatoid disease, a four year study of continuous therapy, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
5. Bruckner I., and Rosenzweig, S.: Treatment of chronic rheumatoid arthritis with synthetic antimalarials, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
6. Cohen, A.S., and Calkins, Evan: A controlled study of chloroquine as an antirheumatic agent, read at the Ninth International Congress on Rheumatic Diseases in Toronto, Canada, June 23-28, 1957.
7. Scherbel, A. L., Schuchter, S.L., and Harrison, J.W.: Comparison of effects of two

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why wine in geriatrics and convalescence?

Convalescents, regardless of their years, share many of the tonic and recuperative needs of the aged, and wine is probably more widely recommended in the care of these patient groups than in any other.

Many generations of physicians have warmly advocated not only dry table wines but also sweet dessert wines of many varieties for their nutritional value in elderly and convalescent patients.

Now modern research supplies the *raison d'être* by clearly showing that wine not only supplies quick fuel but also serves to stimulate the desire for food where appetite is poor.

WINE AIDS DIGESTION—Wine has been found to increase salivary flow,¹ stimulate gastric secretion² and facilitate the gastrocolic reflex.³

WINE FOR GENTLE, SAFE SEDATION—Described as the safest of all sedatives, wine can often dispel the anxieties, fears and emotional pressures of old age and prolonged illness. The relaxation of gastric tension produced by moderate amounts of wine may be a significant factor in the prevention of dyspepsia. The systemic sedative⁴ and vasodilative⁵ actions of wine can be of great aid in cardiovascular disease.

For a few cents a day your patients can have wines produced from the world's finest grape varieties grown in an ideal climate and handled with consummate skill.

Research information on wine is available on request. Just write for your copy of "Uses of Wine in Medical Practice." Wine Advisory Board, 717 Market Street, San Francisco 3, California.

1. Winsor, A. L., and Strongin, E. I.: *J. Exper. Psychol.* 16:589 (1933).

2. Ogden, E., and Southard, Jr., F. D.: *Fed. Proceedings* 5:77 (1946).

3. Adler, H. F.; Beozell, J. M.; Atkinson, A. J., and Ivy, A. C.: *Quart. J. Studies on Alc.* 1:638 (1941).

4. Solter, W. T.: *Geriatrics* 7:317 (1952).

5. Wright, I. S., *Arteriosclerosis*, in Steigltz, E. J.: *Geriatric Medicine*, Philadelphia, W. B. Saunders Co. (1949).

FOR THE ENTIRE RANGE OF RHEUMATIC-ARTHRITIC
DISORDERS—from the mildest
to the most severe

many patients with **MILD** involvement can be effectively
controlled with

'MEPROLONE'

many patients with **MODERATELY SEVERE** involvement
can be effectively controlled with

'MEPROLONE'

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MULTIPLE COMPRESSED TABLETS

'MEPROLONE'

The first meprobamate-prednisolone therapy

the one antirheumatic, antiarthritic that
simultaneously relieves: (1) muscle spasm
(2) joint inflammation (3) anxiety and
tension (4) discomfort and disability.

SUPPLIED: Multiple Compressed Tablets
in three formulas: 'MEPROLONE'-5—
5.0 mg. prednisolone, 400 mg. meproba-
mate and 200 mg. dried aluminum hy-
droxide gel. 'MEPROLONE'-2—2.0 mg.
prednisolone, 200 mg. meprobamate and
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gel. 'MEPROLONE'-1 supplies 1.0 mg.
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A AZOTREX is the only
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- (1) the broad-spectrum
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blood levels;
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peutic effectiveness of
sulfamethizole—out-
standing for solubility,
absorption and safety;
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action of phenylazo-
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control of urinary

through comprehensive

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This unique formulation assures faster and more certain control of urinary tract infections, by providing comprehensive effectiveness against whatever sensitive organisms may be involved. Indicated in the treatment of cystitis, urethritis, pyelitis, pyelonephritis, ureteritis and prostatitis due to bacterial infection. Also before and after genitourinary surgery and instrumentation, and for prophylaxis.

In each AZOTREX Capsule:

TETREX (tetracycline phosphate complex) ...125 mg.

Sulfamethizole250 mg.

Phenylazo-diamino-
pyridine HCl50 mg.

Min. adult dose: 1 cap. q.i.d.

tract infections

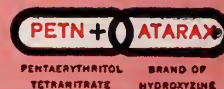
tetracycline-sulfonamide-analgesic action

otrexTM

CAPSULES

*"the value of analgesic and tranquilizing agents
should be clearly recognized in the management of [angina]..."¹*

new for angina



CARTRAX*

links freedom from anginal attacks with a shelter of tranquility

In pain. Anxious. Fearful. On the road to cardiac invalidism. These are the pathways of angina patients. For fear and pain are inextricably linked in the angina syndrome.

For angina patients—perhaps the next one who enters your office—won't you consider new CARTRAX? This doubly effective therapy combines PETN (pentaerythritol tetranitrate) for lasting vasodilation and ATARAX for peace of mind. Thus CARTRAX relieves not only the anginal pain but reduces the concomitant anxiety.

Dosage and supplied: begin with 1 to 2 yellow tablets (10 mg. PETN plus 10 mg. ATARAX) 3 to 4 times daily. This may be increased for maximal effect by switching to *pink* tablets (20 mg. PETN plus 10 mg. ATARAX). In bottles of 100.

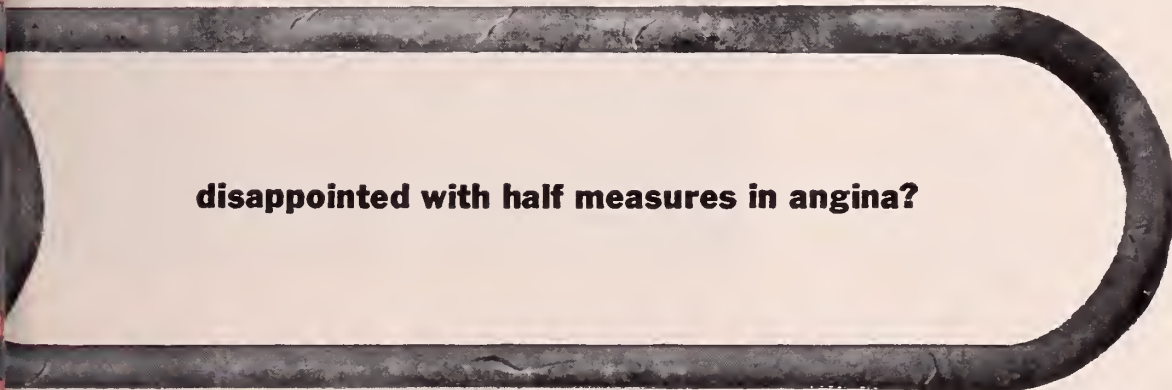
CARTRAX should be taken *before meals, on a continuous dosage schedule.* Use with caution in glaucoma.

1. Russek, H. I.: J. Am. Geriat. Soc. 4:877 (Sept.) 1956.

*Trademark



New York 17, New York



disappointed with half measures in angina?

← READ THIS

KNOX PROTEIN PREVIEWS

TWO NEW
CLINICAL
REPORTS
REAFFIRM
THE
BENEFITS OF

GELATINE FOR



Evidence continues to accumulate verifying the effectiveness of Gelatine in the treatment of brittle fingernails. Investigators report that the nails show objective evidence of improvement.^{1,2,3,4} Furthermore, patients often volunteer that their nails "feel stronger," "look smoother," and "I can pick up things without them hurting."¹ Evidently the subjective sensations associated with improvement are nearly as important to some patients as the positive physical change in the nails' appearance.

Improvement Noted in 81% of Patients

See the chart below for a summary of the effect of Knox Gelatine in brittle fingernails as observed in all published reports. Photographic evidence of improvement, much of it in color taken before and during treatment, is available for most of the patients.^{1,2,3} Please note, however, that where Gelatine was used in the treatment of pathological conditions associated with brittle fingernails only in psoriasis did the data show definite improvement.^{1,3,4}

Response to Gelatine in Brittle Fingernails

References	Dosage	Duration of treatment	No. patients w/ brittle nails	No. patients improved	No. patients w/ brittle nails and other pathology	No. patients improved
1. Rosenberg, S., Oster, K. A., Kallos, A. and Burroughs, W.: <i>A.M.A. Arch. Dermat.</i> 76:330, (September) 1957	7 Gm./day	3 months	50	43 (86%)	32 ^a	9
2. Schwimmer, M. and Mulinos, M. G.: <i>Antibiot. Med. & Clin. Therapy</i> 4:403, (July) 1957	7.5 Gm./day	11-16 weeks	18	15 (83%)		
3. Rosenberg, S. and Oster, K. A.: <i>Cann. State Med. J.</i> 19:171, (March) 1955	7 to 21 Gm./day	15 weeks	36	26 ^b (72%)		
4. Tyson, T. L.: <i>J. Invest. Dermat.</i> 14:323, (May) 1950	7 Gm./day	13 weeks	12	10 ^c (83%)		
Totals	7-21 Gm.	11-16 weeks	116	94 (81%)	32	9 (28%)

- Gelatine improved psoriatic nails in 5 out of 12 cases. In onychomycosis and other pathological conditions of the nail it was of no appreciable help.
- Of the failures, 2 had congenital disease of the nails, 3 were diabetics and 3 took the medication for less than one month.
- One patient with psoriasis and arthritis and one patient with psoriasiform nail changes showed improvement in 2 and 3 months respectively.

BRITTLE FINGERNAILS

Important Note

The pharmacodynamic effects of Gelatine are manifested through its high Specific Dynamic Action, and therefore, depend upon adequate and prolonged intake. All published clinical research has been conducted using 7 to 21 grams (1-3 envelopes) of Knox Gelatine per day for the three to four months that are required for complete regrowth of the nails. Smaller dosage would induce a lesser specific dynamic action and thus prove ineffectual in correcting the brittle nail defects. More detailed information on brittle fingernails and reprints of the two more recent clinical reports are available on request. Please use the attached coupon.

Knox Gelatine Company
Professional Service Department SJ-27
Johnstown, N. Y.

Please send reprints of the following articles:

- ☐ Rosenberg, S., Oster, K. A., Kallos, A. and Burroughs, W.: *A.M.A. Arch. Dermat.* 76:330, (Sept.) 1957.
- ☐ Schwimmer, M. and Mulinos, M.G.: *Antibiot. Med. & Clin. Therapy* 4:403, (July) 1957.

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assure her

***a more serene, a happier pregnancy
... without nausea***

give her **'MAREDOX'**[®]
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Cyclizine Hydrochloride and Pyridoxine Hydrochloride

because

'Maredox' gives the expectant mother new-found relief from morning sickness.

relieves nausea and vomiting
and
counteracts pyridoxine deficiency } *in pregnancy*

One tablet a day, taken either on rising or at night, is all that most women require.

Each tablet of 'Maredox' contains:

'Marezine'® brand Cyclizine Hydrochloride. 50 mg.

Pyridoxine Hydrochloride 50 mg.



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For the common cold . . . *symptom by symptom* *and prevention of sequelae*

To check symptoms, to curb bacterial complications,
prescribe PEN•VEE•Cidin for its *multiple* benefits.

It exerts antibacterial, analgesic, antipyretic,
antihistaminic, sedative, and mild
mood-stimulating actions.

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OF THE COMMON COLD TO CONTAIN PENICILLIN V!

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6.25 mg. of promethazine hydrochloride, 130 mg. of phenacetin,
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your patients with generalized gastrointestinal complaints need the comprehensive benefits of

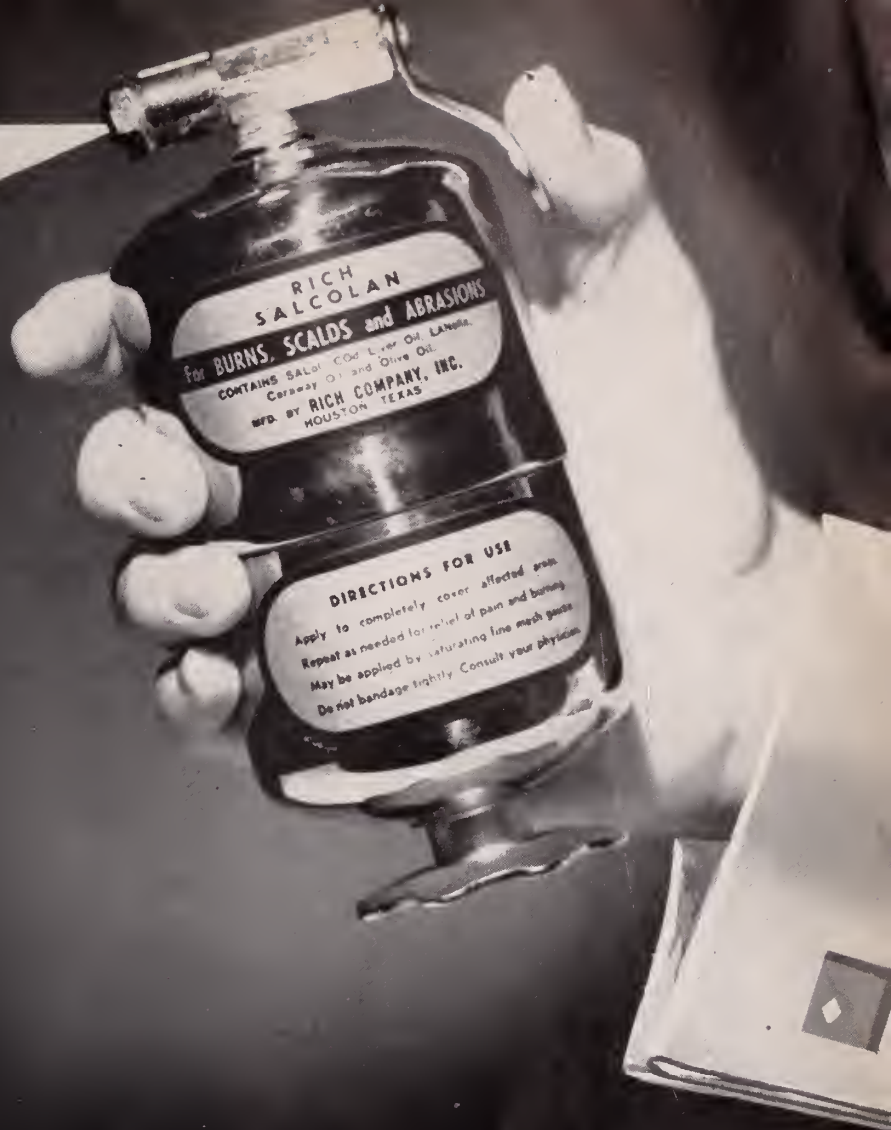
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(DACTIL[®] + PIPTAL[®]—in one tablet)

rapid, prolonged relief throughout the G.I. tract
with unusual freedom from antispasmodic
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One tablet two or three times a day and one at bedtime. Each TRIDAL tablet contains 50 mg. of Dactil, the *only* brand of N-ethyl-3-piperidyl diphenylacetate hydrochloride, and 5 mg. of Piptal, the *only* brand of N-ethyl-3-piperidyl-benzilate methobromide.

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		Excellent	Good	Fair	Negative	
Allergic rhinitis and vasomotor rhinitis	30	14	9	5	2	Slight Drowsiness (3)
Urticaria and angioneurotic edema	3	1	1	1		Dizzy (1)
Allergic dermatitis	2		1	1		Slight Drowsiness (2)
Bronchial asthma	1		1			
Pruritus	1		1			
Total	37	15	13	7	2	Drowsiness (5) 16.2% Dizzy (1)

From the preliminary Dimetane Extentabs studies of three investigators. Further clinical investigations will be reported as completed.



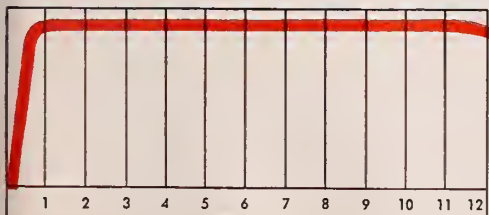
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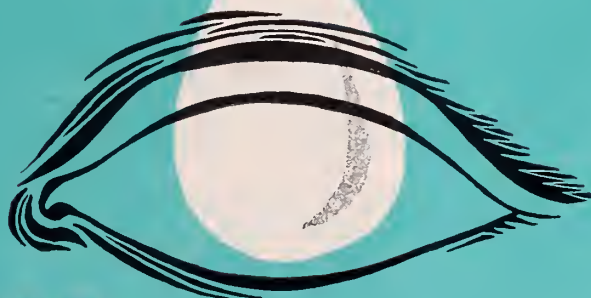
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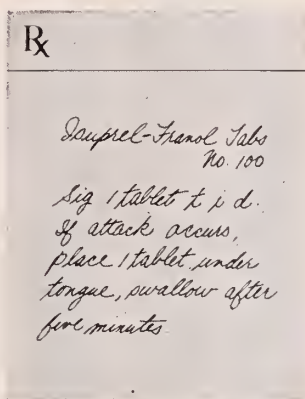
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1. Fromer, J. L., and DeRisio, V. J.: *Lahey Clin. Bull.* 10:45, Oct.-Dec., 1956.

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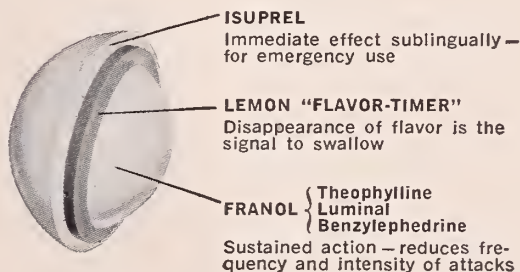
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Lewis, H. H.; Frumess, G. M., and Henschel, E. J.: *Rocky Mountain M. J.* 54:806 (Aug.) 1957.

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Shubin, H.: *Antibiotic Med. & Clin. Therapy* 4:174 (March) 1957.

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Levi, W. M., and Kredel, F. E.: *J. South Carolina M. A.* 53:178 (May) 1957.

Of 50 patients with various infectious processes, 26 had not responded to previous antibiotic therapy. With Signemycin "Ninety-six per cent of the mixed infections were clinically controlled. . . . and in none of the cases was there any reason to discontinue the drug."

Winton, S. S., and Chesrow, E.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 55.

Signemycin in 79 patients with severe soft tissue infections: "The average response of these cases was excellent and inflammatory symptoms subsided with almost uniform rapidity....The magnitude and incidence of surgical intervention was reduced....Side reactions were minimal. . . ."

LaCaille, R. A., and Prigot, A.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 67.

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Frank, L., and Stritzler, C.: *Antibiotic Med. & Clin. Therapy* 4:419 (July) 1957.

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Loughlin, E. H., and Mullin, W. G.: *Antibiotics Annual 1956-1957*, New York, Medical Encyclopedia, Inc., 1957, p. 63.

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1. Nichols, R. L. and Finland, M.: *J. Clin. Med.*, 49:410, 1957.

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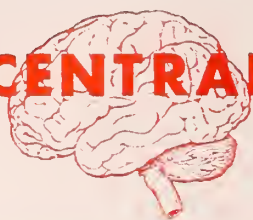
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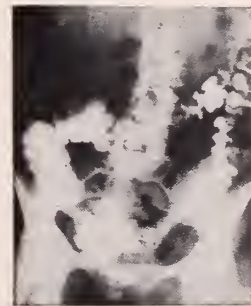
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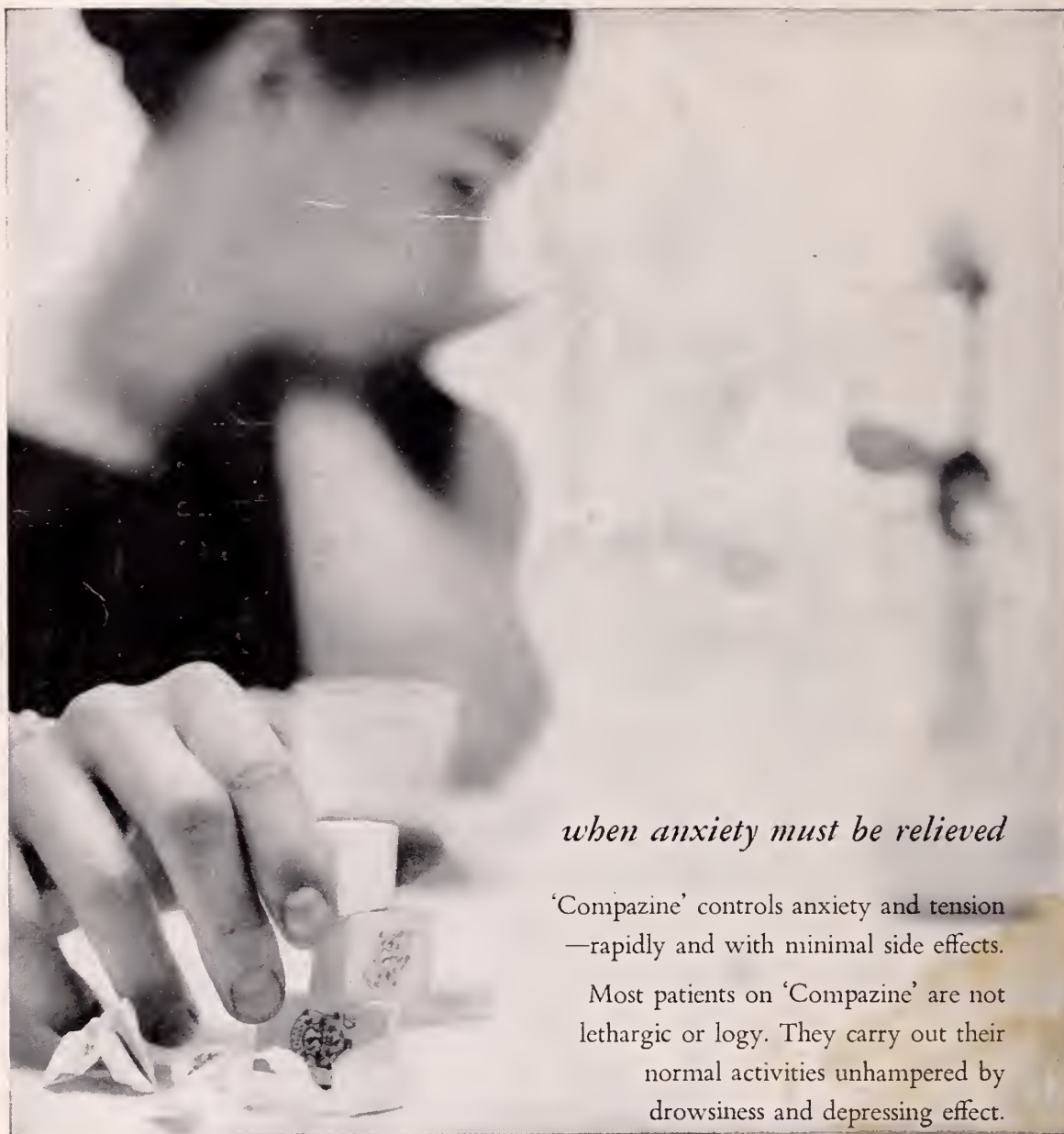
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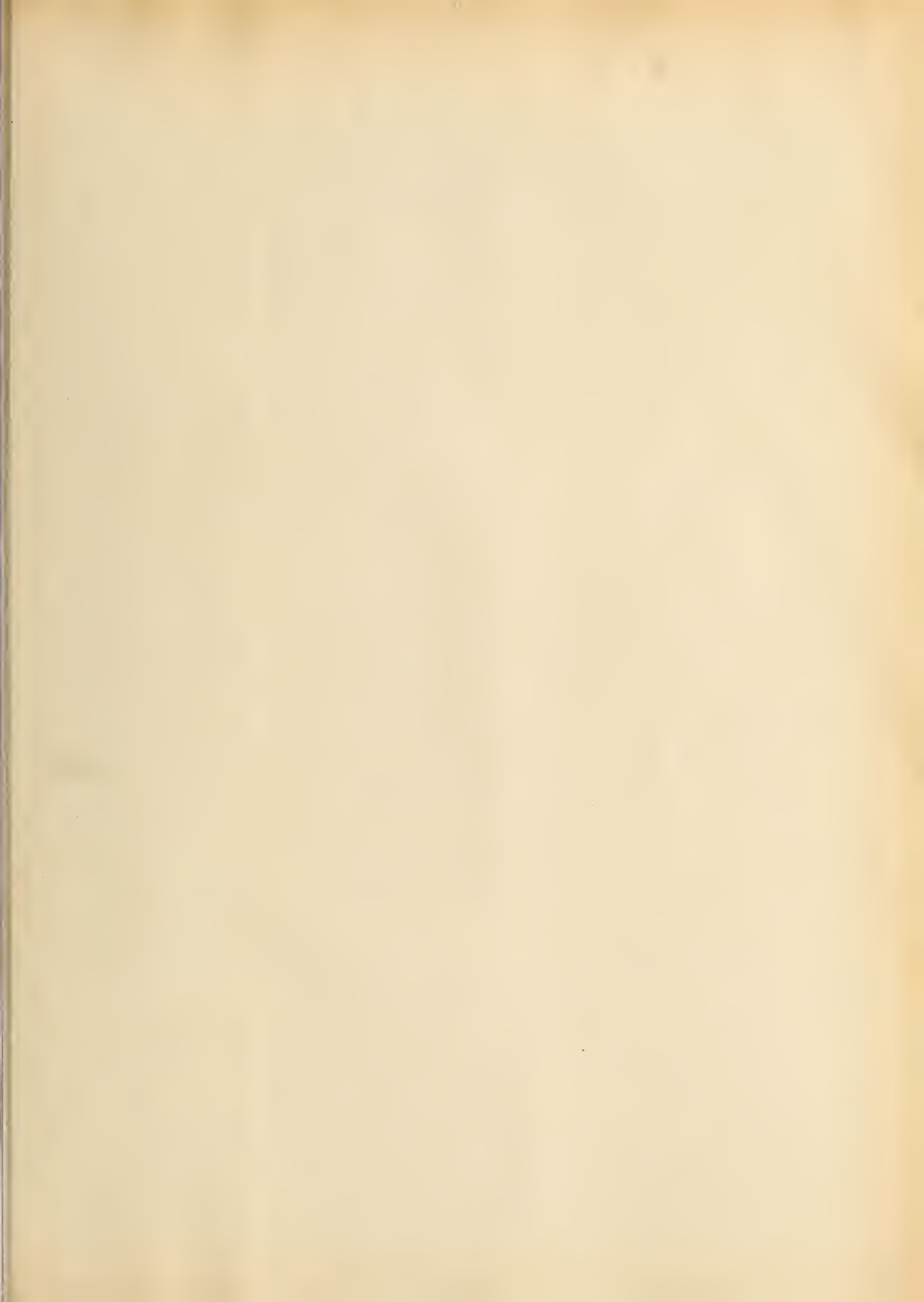
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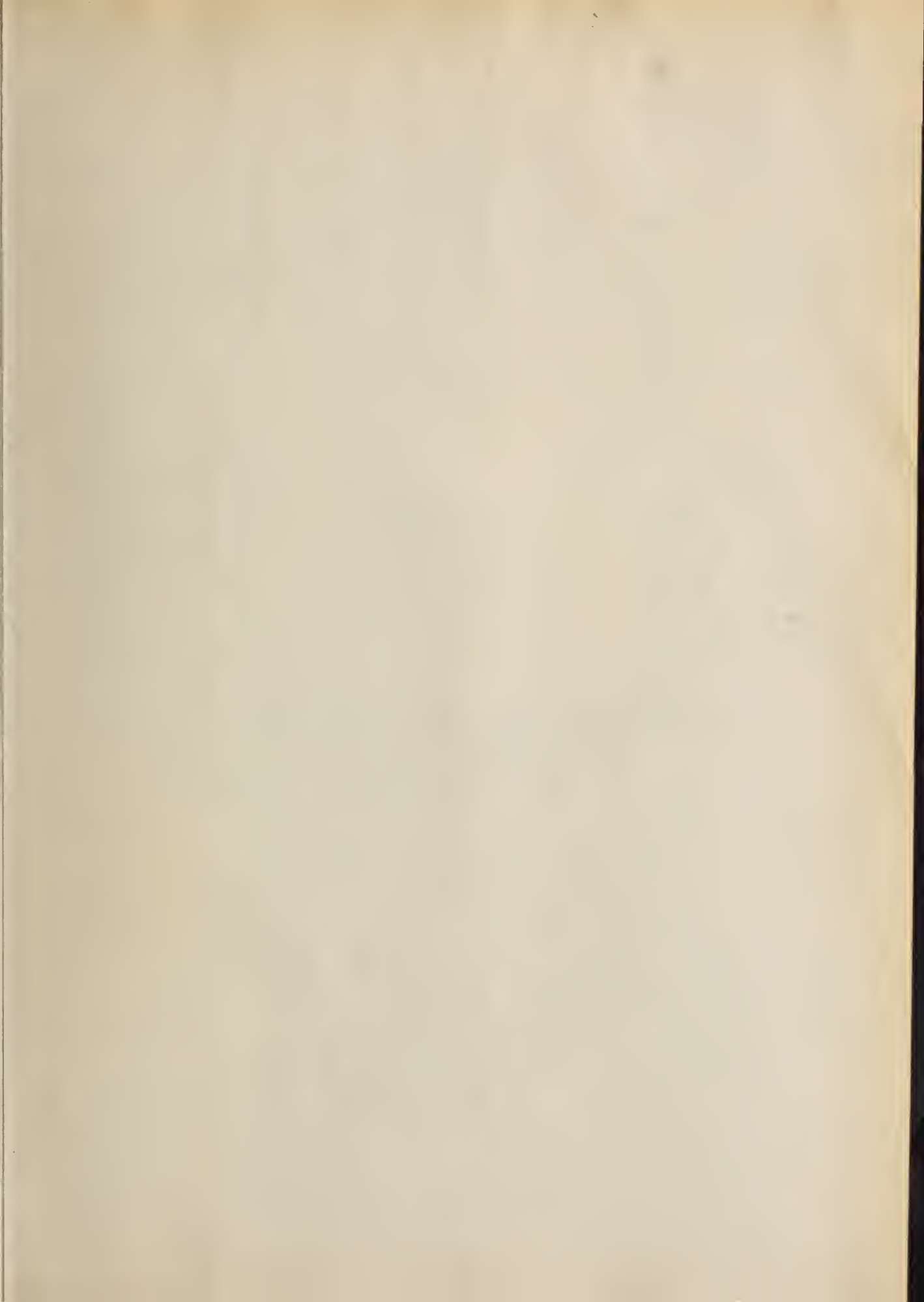
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DUE IN TWO WEEKS UNLESS RENEWED.

NOT RENEWABLE AFTER 6 WEEKS

DATE BORROWED	BORROWER
JAN 29 1950	W. H. Ward
OCT 22 1952	Wingard
JAN 8 - 1958	Wether

